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WHAT MARKET MEASURES IN THE FUTURE CAP AFTER 2013?

STUDY

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This document was requested by the European Parliament's Committee on Agriculture and Rural Development.

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Abstract

Market measures for new post-2013 CAP must help EU agriculture to cope with a different set of challenges than were relevant in the past. Pro-active market measures are preferred to re-active measures. Governments should help private markets to offer farmers the widest choice of instruments, and intervene only when these fail. This report focuses on market measures that the European Commission should consider, including market management instruments, such as storage or border protection, risk and crises management, rules to improve markets' functioning or food access. Although not directly related with post-2013 market measures, the report makes a number of suggestions about the EU's role in world food markets. It is suggested that the EU should take a leading role in making world food markets more transparent, creating effective market intelligence mechanisms, and reinforcing the regulatory mechanisms of commodities markets.

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LIST OF ABBREVIATIONS

AGRI	Agriculture and Rural Development Committee
CAP	Common Agricultural Policy
CME	Chicago Mercantile Exchange
CMO	Common market organisation
EAGF	European Agricultural Guarantee Fund
ELS	Event Linked Securities
EU	European Union
F&V	Fruits and Vegetables
FAO	Food and Agriculture Organisation of the United Nations
FSC	Food Supply Chain
IPO	Inter-professional Organization
ISNT	Income Safety Net Tool
MDP	Most Deprived Persons of the Community
MFF	Multiannual Financial Framework
MS	Member State
OP	Operational Program
PO	Producer Organization
SFP	Single Farm Payment
SME	Small and Medium Enterprise
SPS	Single Payment Scheme
TFEU	Treaty of the Functioning of the European Union
WTO	World Trade Organization

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EXECUTIVE SUMMARY

EU Common Agricultural Policy, through its successive reforms, has gradually evolved from market and price support towards a more decoupled form of income support. As a result, farmers have become more market-oriented, and their incomes are therefore more exposed to market volatility.

Markets for many products have become more volatile and less predictable in recent years, and this trend is expected to persist as markets continue to become more globalised. As EU agriculture becomes more market-oriented, severe market crises are likely to be much more damaging for producers, consumers and the processing industries.

The extreme market volatility experienced in recent years is evidence of the need for better-performing market management instruments to manage extreme price volatility. Although market measures included in the single CMO helped to lessen some harmful effects, the recent milk crisis has highlighted the fact that other issues, including better supply-demand coordination and rebalancing of market power along the food supply chain, require further attention.

Against this background of ongoing policy reform and debate, the aims of this study are as follows: a) to develop a qualitative analysis of the **insufficiencies** of the current CAP vis-à-vis the growing volatility of markets; and b) to **propose a new and detailed market management framework** in the context of the CAP post-2013.

First, the study develops a conceptual framework to qualify market volatility and crisis. Defining excessive market volatility and market crisis is by no means easy and should be adapted to the specific characteristics of each sector. Several indicators are proposed, including price levels in given markets, observed market volatility and implied volatility. In particular, both the depth and the length of an unexpected price depression must be considered.

Next, the available market instruments are analysed, and some potential new tools are suggested. The market instruments are grouped as follows: (i) instruments to improve market function and performance; (ii) instruments for risk and crisis management; (iii) market management instruments; and (iv) food access instruments.

Finally, a set of policy instruments with the potential to positively affect EU agriculture is proposed. This set of instruments includes both existing and new tools.

Instruments to improve markets' functioning and performance (2.1.)

Amongst its objectives, the Commission Communication on "The CAP towards 2020" includes improving the competitiveness of the agricultural sector and enhancing its value in the food chain. The farmers' share of the value-added generated in the food supply chain has decreased in recent years. A more balanced food supply chain is needed to improve the economic results for farms. By contrast, the unbalanced bargaining power of farmers with other actors along the chain has been identified as the source of potentially unfair practices.

In this section, we analyse measures that can contribute to better functioning markets that improve farmers' returns in the value chain. In particular, standard contracts, the competition rules, the codes of good practices and the roles of Inter-Professional organisations (IPOs) and Producer Organisations (POs) are analysed.

a) Contractual mechanisms

Contractual mechanisms within the food supply chain (FSC) are highly diverse, ranging from horizontal agreements to vertical integration practices. The standardisation of written contracts, which involves setting up the basic elements of contract forms, may contribute to protecting producers' rights, reducing transaction costs and combating unfair practices in the FSC.

The promotion of written contracts may be particularly relevant within non-processed food supply chains, which are characterised by highly atomised suppliers and strong buyers, where acute tensions have been identified in the markets of perishable products.
Given the high heterogeneity among sectors and even subsectors, a "one size fits all" scheme is not applicable, and contracts should be adapted to the specific needs of each product or sector. The recent milk proposal[3] provides for optional written contracts between milk producers and processors that are drawn up in advance of deliveries and that include details regarding the price, timing, volume of deliveries, and duration of the agreement. The establishment of monitoring committees is crucial to guarantee success in the standardisation process.

b) Competition rules

The Treatment on the Functioning of the EU (TFEU) prohibits collusive behaviour (Art. 101) and abuse by the dominant party (Art. 102). This legislation applies to the farming sector and all other sectors excepting those practices that result from compliance with specific laws (e.g., Single CMO).

The actual competition framework limits the possibility of collective negotiation in the absence of shared facilities. There is considerable debate about the interpretation of these rules. There are discussions about their possible amendment to allow for a more flexible approach in the agricultural sector.

Application of Article 102 of the TFEU has been limited because of the insurmountable problems associated with finding proof of dominance or abuse. Furthermore, abuse by the dominant position does not necessarily imply a restriction to competition and thus does not always warrant the intervention of competition authorities.

The situation has triggered legislative responses in many Member States, such as the adoption of codes of good practices establishing rules for transactions between large retailers and their suppliers. Codes of conduct list "good practices" that may help promote fair dealings in horizontal and, especially, in vertical relations. The approach should be voluntary, and adhesion could be promoted and recognised through a certification mechanism.

[3] http://ec.europa.eu/agriculture/milk/proposal-12-2010/com-2010-728_en.pdf

c) Producer Organisations (PO)

Producers' organisations (PO) primarily focus on concentrating supply, ensuring compatibility between production and market demand, reducing production costs and promoting environmentally friendly cultural practices.

On the whole, large cooperatives are getting larger as a result of concentration. This strategy has favoured the development of higher value added products and contributes to improved market positioning. Nevertheless, wide differences in size and organisation can be found both at sector and Member State levels. In this regard, the rate of concentration remains much lower in new MSs and Southern Europe, and inefficient structures have been reported in the non-processed food supply chain, where supply concentration and better organisation is most needed.

Encouraging POs has facilitated the structural adjustment in the fruit-and-vegetables supply chain by promoting the adoption of strategic approaches (versus mere grouping of produce). The main areas of progress are related to environmental objectives, quality and product value and improved market orientation, whereas moderate progress has been attained with regard to the supply concentration objective.

A distinction must be made between those POs that share commercial and joint production facilities (the co-op model) and those POs that only share commercialisation agreements. Measures to promote the co-op model may render important benefits, not only in terms of reducing tensions in the food chain, rebalancing the bargaining power and avoiding unfair practices, but also with regard to capturing efficiency gains and a higher share of value added through vertical integration. The co-op model improves vertical coordination through the development of quality policies, private standards, conformity and other certifications that cannot be implemented by individual producers.

d) Inter-professional Organisations (IPO)

Although POs mostly involve horizontal actions such as concentration of supply, inter-professional organisations (IPO) represent the vertical structure of the food chain.

IPOs are recognised by EU legislation as organisations pertaining to economic activities linked to the production of, trade in, and/or processing of products in a number of sectors. Currently only five sectors are included: fruit and vegetables, tobacco, wine, olives/olive oil and cotton.

Nevertheless, although the activities of the IPOs should be defined in conjunction with the specificities of each sector, IPOs might also be extended to other agricultural products. Examples at the MS level in France, Italy and Spain show that there is no reason to restrict IPOs to selected sectors.

Instruments of risk and crisis management (2.2.)

Risks include normal business risk and extreme risk. A crisis occurs when extreme risk affects a large number of farms. Each type of risk requires different types of measures. For example, ex-ante or proactive measures should address both normal and extreme risks, whereas ex-post measures or reactive measures are designed to cope with unforeseen extreme or crisis situations that are not covered by other measures.

a) Ex-ante measures: Derivative contracts

Derivative contracts are negotiated in exchanges or futures markets. They are financial contracts that include contracts for commodities futures, options on futures, options on weather indexes, and swaps among others. Farmers can use these contracts to protect themselves from downward price risk as well as other risks (i.e., climatic) if the right types of contract are available.

Market-based mechanisms such as derivative contracts, private insurance and mutual funds could greatly benefit risk-sharing at an affordable cost. As a result, the problems derived from speculation could be avoided with more transparency, control and better regulation.

The development of these markets is slowed by the lack of training, the lack of an adequate institutional and legal environment, and very often the lack of relevant data. There are thus three government actions that may promote the use of derivative contracts: (i) farmers' training, (ii) the creation of the institutional and legal environment needed for the private markets to operate smoothly, and (iii) the provision of timely and reliable information.

b) Ex-ante measures: Risk management toolkit

Although pursuing risk management strategies should be the farmers' responsibility, we must also recognise that private instruments are still not well developed in Europe, partly because of historical CAP intervention measures. In this regard, governments could certainly promote instruments to improve risk management. The Commission Communication on "The CAP towards 2020" proposed the introduction of an optional risk management toolkit in the Second Pillar (COM(2010) 672 final). However, it is argued in this report that the toolkit could be also funded from the first pillar. Some instruments that may be included in this toolkit are described below.

b.1) Mutual risk sharing arrangements (mutual funds)

If the legal and institutional conditions exist, groups of producers can join in the administration of a mutual agricultural insurance fund. This presents some advantages over existing insurances, but the scope of such a fund is limited to non-systemic risks because risks cannot be pooled with other types of producers.

b.2) Production (crop and livestock) insurance

Production insurance has developed as a form of contract in which one party transfers a well-identified economic risk to another party by paying a price (the "premium"). Traditionally, effective insurance for crop production exists only for a very limited number of hazards (namely hail and, to a much lesser extent, fire). Although such single-risk insurance is well developed in Europe, multiple peril or all-risk crop insurance exists in only a limited number of countries. Private companies insure only hail and fire, though more comprehensive coverage is provided as the government increases its involvement in insurance.

b.3) Income and revenue insurance

'Revenue' insurance combines both production and market risks protection, so that it would trigger a payment when the product of price and production is below the guaranteed revenue level. Revenue insurance could be an efficient tool but, because of the high cost of reinsurance, can only be developed with public support.

'Income' insurance takes into account whole-farm income, guaranteeing the margin between revenue and production costs. Although revenue insurance is well-developed in the USA, income insurance is comparatively nonexistent. This is because, in addition to the high cost of reinsurance because of the systemic character of the risk covered, income insurance faces a number of technical problems, such as lack of data and asymmetry of information.

b.4) Income stabilisation tools and income safety-net tools

If the objective is to increase the farmers' income stability, income stabilisation tools could provide an alternative to income insurance.

Similarly to income insurance, this instrument aims at guaranteeing a minimum of income. In contrast with income insurance, in this tool the Government (national or EU) acts as insurer and pays most of the compensation. Because of this reason and given the existence of other mechanisms to protect against "normal" risks, an income tool should not provide a general income support to all farmers but should be targeted at farmers who experience severe income losses. If this is the case, it is more convenient to speak of income safety-net tools (ISNTs).

An ISNT could be designed so that it provides coverage only for risks that are not covered by other existing instruments. Farmers should pay a fee to participate so that there is co-responsibility in risk management. Furthermore, following the example of the French Calamity Fund and Spanish eligibility for ad-hoc payments in case of non-insurable hazards, farmers could be required to buy some nominal amount of insurance coverage to be eligible for further ISNT assistance for non-insurable risks. Though ISNTs do not currently exist in the EU, they do show potential in that some technical/political aspects are solved.

Public aid given through income-based tools such as income insurance is constrained by the limitations established by Paragraph 7 in Annex 2 of the WTO Agreement on Agriculture. Thus, payments cannot be based on specific crop revenue losses, which would be much simpler, but must be based on the whole-farm gross income, which entails more complex calculations. Another issue is the measurement of "real" farm income. A possible alternative to consider is "estimating" farm income according to transparent rules based on a combination of real production, price indexes, and estimates of input amounts from averages (for example, from the Standard Gross Margins from FADN).

c) Ex-post measures: State aids

Member States can also intervene with emergency aid, with the Commission ensuring that any aid given does not distort competition. The current guidelines for State aid in the agricultural sector limit the scope of national ad-hoc aid to production risks.

d) Ex-post measures: EU budget reserves

The single CMO enables the EU Commission to take exceptional measures in cases of markets affected by restrictions on trade resulting from the application of measures for combating the spread of diseases or when other measures prove insufficient in some sectors. However, this possibility faces implementation difficulties because of the lack of an appropriate budget.

Unallocated margins could be used or unused margins could be transferred from one year to another to establish a Budget Reserve that could be activated if there were a serious crisis. Alternative measures might include a multi-year agricultural envelope that could be activated during a serious crisis.

Market management instruments (2.3)

a) Public and Private Storage

Problems associated with both private and public storage are analysed below from economic and practical perspectives. Private storage is preferable to public storage, particularly when quality and storage costs are relevant. At the same time, there is a rationale for government intervention in stimulating building and disposing of reserves of key commodities.

Storage policies may be costly and have very limited impact if domestic and international markets are highly interrelated, but they may have significant scope if price formation is mainly domestic (e.g., meat or meat products) or to smooth intra-seasonal peaks (e.g., in the milk sector).

b) Border measures

The use of border measures as a market management instrument is restricted by the Uruguay Round on Agriculture Agreement (URAA). Nonetheless, some scope for intervention remains, particularly with regard to market access.

Presently, border protection continues to moderate the transmission of world price instability to EU markets. Furthermore, as WTO commitments only pertain to the maximum tariffs allowed, the EU can adjust the applied tariffs according to market conditions. Recently, the EU has reduced applied tariffs on several occasions to ease the pressure on EU markets. In the case of serious market perturbations, other interventions may include the possibility of applying additional import duties or adjusting the entry-price system for fruit and vegetables.

c) Augmentation demand strategies: Promotion

Promotion activities are used to increase the consumption of agricultural products to help balance supply and demand. They may be co-financed by the Community budget, subject to certain conditions. However, as a demand augmentation mechanism, promotion programmes may not suffice during a crisis or during prolonged price declining periods. The effects of promotion measures are more significant in the long term, and experience shows that this effectiveness depends on the budget allocation (if it is too low, the effects are very limited) and the matching efforts of the producer organisations. Lastly, promotion activities require reinforced cooperation among firms that create opportunities for the introduction of new technologies, new forms of management and governance as well as new strategies.

d) World markets and price stabilization

Until now, the system of public intervention in the EU has worked in the context of downward trends in real commodity prices and with the predominant aim of supporting EU domestic producer prices. The new scenario involves the possibility of international prices entering a long-term stable or upward trend with increased volatility and upward spikes,

requiring re-examination of the use of storage to protect consumers' interests both in the EU and in poorer countries.

Some proposals have been made to fulfil the objective of stabilising world prices to cope with increasing volatility. One group of proposals considers the constitution of some kind of **international food stocks.** In this regard, we see three options, each with its own set of challenges:

a) The establishment of an internationally coordinated reserve presents many technical and political problems, so its feasibility is questionable.

b) As a stabilisation instrument, the "virtual reserve" has many weaknesses and does not demonstrate any advantage for stabilising EU prices in a more effective way.

c) The unilateral EU establishment of a reserve with stabilisation objectives could be considered for cases of extreme price peaks. This instrument should have two price triggers or bands; intervention in cases of low price peaks would involve reserve purchases, whereas reserves would be activated in cases of upper price peaks. The effectiveness of this response would be minimal unless complemented by additional compatible WTO trade measures.

The second group of measures seeks making **markets** more **transparent**. Better **information** reduces uncertainty and facilitates more efficient responses of producers and consumers. There are several kinds of information that are relevant in this context, where there is scope for improvement:

a) Reliable and timely information on crop supply, demand, stocks and export availability should contribute to improve transparency and reduce uncertainty. Better information could support producers and consumers in adopting correct responses.

b) There is a need to improve the systems to monitor the state of crops and to make accurate harvests forecasts. Governments and international organizations would dispose of better instruments to support their decisions.

c) Better and more complete monitoring of food prices, in spot and future markets, in the main ports, wholesale, regional or local markets would help to better understand price transmission processes, especially in less developed importing countries, which are the most affected by price spikes.

Food access instruments (2.4)

EU's "Food Distribution programme for the Most Deprived Persons of the Community" (MDP) has been in place since December 1987. As recent CAP reforms have gradually reduced intervention to a safety-net role, agencies in charge of running the food aid programmes have recurrently had to purchase food at market prices. In the past, they had access to cheaper stored products. In the event of increasing food prices, these agencies will face difficulties in meeting the needs of their target groups. Improved coordination with other market measures would help agencies that manage food aid take advantage of depressed prices.

With these concerns in mind, stakeholders have been consulted for recent, ongoing discussions regarding this program. Two main conclusions have already been drawn from the consultation process. First, the food supply will be assured in terms of quantity, quality

and forward planning. Second, the scheme's efficiency will be improved thanks to better targeting of MS needs, reinforced monitoring and reporting, and co-financing by MS.

The School Fruit Scheme is intended to (i) increase access to and availability of fruit and vegetables in schools, (ii) improve information on the health benefits of fruit and vegetables and change children's eating habits, and (iii) reduce social inequalities in the consumption of fruit and vegetables. The potential of the fruit scheme to better manage imbalances in the sectors' markets is very limited.

Similar to the School Fruit Scheme, the School Milk Scheme has nutritional and educational goals. Evidence of influence by the School Schemes is ambiguous. Even if the promotional material accompanying each Scheme is excellent, the involvement of families and teachers is necessary to ensure that the educational objectives are met.

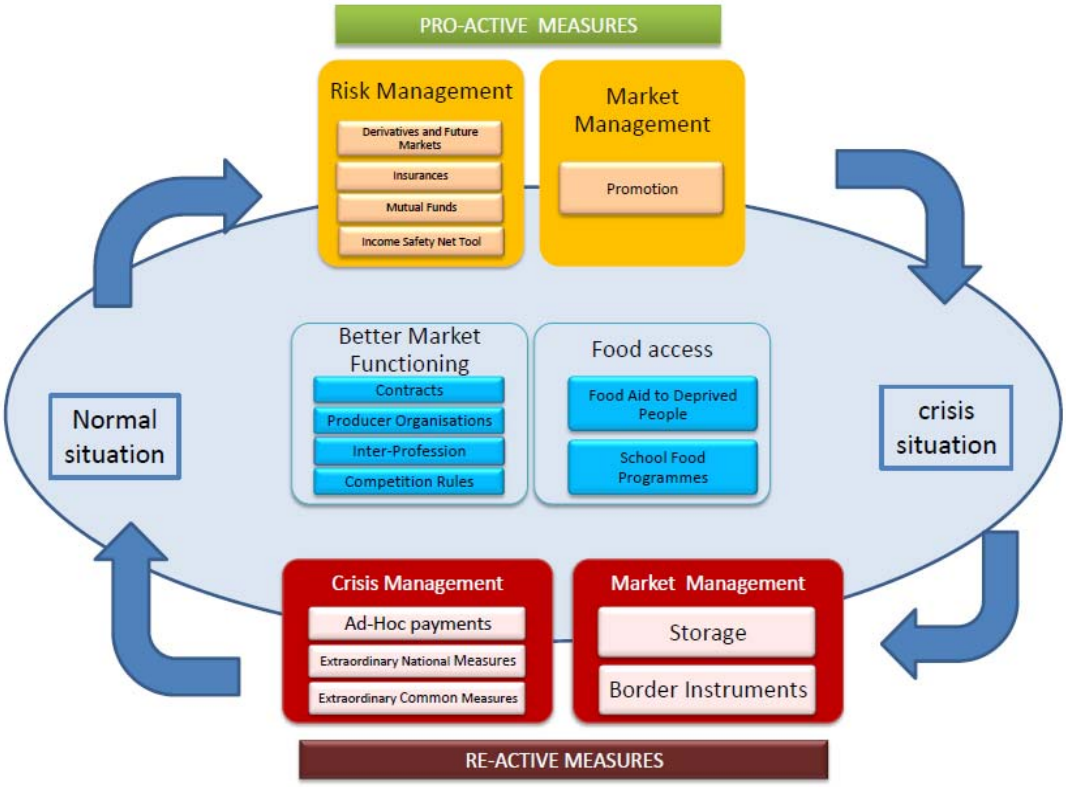
Conclusions and recommendations

Factors that will condition European agriculture in the future include higher volatility and increasing trends in commodities prices, increasing interdependence with energy markets and the high concentration of processors/retailers in food markets. The final decisions of the WTO Doha Round could result in further competitive pressure on some sectors characterised by reduced farms' margins, which already face higher production costs, more demanding environmental regulations and increasingly competition from third countries. Improvements in information channels and access to new communication technologies will condition each sector's capacity to successfully respond to the new challenges, of which the most important may be increasing world food demand, climate change and the sustainable use of scarce water, land and/or energy resources.

The future CAP post-2013 must enhance the competitiveness of agriculture in more open markets, reinforcing market orientation while stabilising farms' incomes. Market measures for the new CAP should combine proactive instruments, allowing producers to cope with moderate risks, with reactive measures helping producers maintain and/or rebuild their financial standing in cases of severe crises. Thus, a specific protocol of measures must be designed for each sector.

The European Commission, in close cooperation with national governments, should improve the information base and implement sophisticated market intelligence strategies. Otherwise, implementation of the future CAP will be severely limited by a lack of perspective and analytical methods.

The proposed set of instruments, including both existing and new tools, is shown in the schema below.



The following premises should be taken into account in defining the set of instruments needed for the future CAP:

- Actions must be taken to improve the functioning of markets, making them more transparent, fair and competitive. Common guidelines should be established as a structural measure for all sectors to enhance the FSC and make it more robust. These will provide synergies that may reduce the need for implementing market management instruments and public sector market interventions.
- A desired approach is to shift the focus from reaction/relief to preparedness; in the design of the CAP post-2013, adaptation and risk management measures, which are more effective and less costly, should be given higher priority than relief and crisis management.
- Open markets and WTO discipline limit the scope of traditional market management measures, such as storage and trade policies, to stabilise agricultural prices. These instruments should only be used in the case of a severe and extreme internal market crisis.
- There is a need for a gradual change in the design of market measures in the new CAP. The traditional top-down approach should give way to a bottom-up approach where more emphasis is placed on flexibility to allow farmers to develop adaptation strategies.
- The new framework for market measures should flexible enough for the entire EU and sectors so that they can address all situations and national legal set-ups.

The proposed set of instruments involves the following:

1) Streamlining and adapting instruments that are currently in place:

- Promoting **Producer** and **Inter-professional Organisations**, which must play a central role in the restructuring and rebalancing of the Food Chain.
- Promoting **market transparency** and **contractual mechanisms** that include **contract standards** and voluntary **codes of "good commercial practices"** that will improve the functioning of markets and mitigate unfair practices.
- Reinforcing **competition rules** through better monitoring and coordination among MMSS.
- Using **State aid** as a last resort for small amounts of aid targeting very specific problems.
- **Private storage** should always precede and prevail over **public storage**. Public storage could be maintained as a last resort, allowing the Commission to take exceptional measures in cases of serious market disturbances. Private storage should be targeted to solve temporary critical price or market situations, but never to solve structural market unbalances.
- Some scope for **border protection** remains, especially in market access regulation.
- **Promotion** programmes for EU agricultural and food products in third world countries, for products which compete in non-EU markets with other exporters' whose governments do support producers' commercial actions, are an effective means for opening new market opportunities.
- There is scope for further **promoting products with inherent** EU value or intrinsic quality (i.e., ecologic, cultural), but increased funding is needed to achieve the objectives.
- Improving **human health** through the consumption of fruit and vegetables and dairy products, such as through **School Schemes,** should be considered an essential social objective.
- Programmes providing **Food aid to deprived people** should be better coordinated with agricultural markets.

2) Introducing new policy instruments

- Specific training programmes to help farmers understanding, assessing and using present and future risk management instruments are needed. The EU could develop new strategies with this objective, making use of new learning technologies, and developing training materials translated into different languages.
- A **toolkit** offering a menu for diverse EU agriculture and farmers' risk perceptions is proposed. It could be included in pillar II and be based on flexible co-funding schemes, risk layering and co-responsibility of farmers. No instrument in the toolkit should be offered free of charge.
- **Normal/business risk** can be managed with mutual funds, production insurance and income insurance. The development of derivative markets (futures and options), insurance and mutual schemes should be fostered by the provision of timely and reliable market information and by adequate regulatory frameworks.

- Development of **common guidelines for EU agri-insurance** markets could help establish a balanced system that would eventually lead to more integration of the agricultural insurance market, allowing for efficiency gains achieved by risk-pooling and dispersion. In addition, the Guidelines could help to develop insurance in countries where the demand exists (especially new MMSS).
- Introduction of a new **Income Safety Net Tool**, targeted at extreme risks or crises, should be developed as a public-private partnership scheme that is based on co-responsibility of farmers, co-financing and 'green-box' compatibility. Although it would be less expensive and more efficient with regard to pooling wide risks if implemented at the EU level, it may be more feasible at the national level, at least in the first stages of implementation.

3) Increasing budget flexibility

- More **flexible EU budget** programming and appropriation rules should be considered to allow for timely interventions in cases of widespread crises.

4) Reinforcing coordination with other policies

- **Better coordination with other EU policies** (aimed at identifying synergies and avoiding conflicting policy interactions) is needed.
- For proper function, the **world markets** require regulations that are enforced. The EU must provide better governance over global markets, supporting improvements in information and transparency.
- The EU should enhance its role as the leading provider of humanitarian help in third world countries. **Emergency reserve funds** targeting consumption would constitute a significant European contribution to food security.
- Efforts are needed **to make market more transparent** through better information systems**.** The EU could play a major role in enhancing these by financing market information initiatives, especially in developing countries, and by facilitating the availability of such information through publicly available databases.

1. INTRODUCTION

1.1. Scope and objectives

With its "Health Check", the CAP reform has advanced towards the further decoupling of farms' income support. As a result, farmers have become more market-oriented, and their incomes more exposed to market volatility. Markets for many products have become more volatile and less predictable. In agriculture, much as in all other sectors, price variations serve as signals to market participants about changing market conditions. Market prices respond to news about changing fundamentals of supply, demand and policy. However, extreme fluctuations and severe market crises have potentially large harmful effects on producers, consumers and the processing industries.

World food market projections for 2050 indicate that food production should grow by 70% (FAO, 2010). The EU Commission expects that agricultural commodity prices will remain higher than their historical averages, reversing the traditional downward trend[4]. Though this behaviour should ease the supply response and increase production, it also introduces new uncertainties.

As markets become more globalised, world regions will tend to specialise in commodities for which they have competitive advantages e.g., soya in Brazil and Argentina, palm oil in Indonesia, etc.). A supply shock, compounded by export restrictions and other ad-hoc market intervention measures in one of these countries, can rapidly spread to related commodities in the rest of the world. Market exchanges are expected to continue growing on a global scale, with the EU maintaining its leading importer and exporter positions. With more frequent and extreme climatic hazards resulting from climate change, supply shocks in basic commodities can have multiplicative effects in world markets. Despite EU sanitary barriers, veterinary crises in the EU are becoming more frequent and more difficult to prevent. The interdependence of financial and energy markets also introduces new sources of price fluctuations.

Historically, the CAP has provided strong market regulations based on public storage and border protection. However, reform processes have re-channelled this support towards direct payments, maintaining market regulation as a sort of safety net only for certain products. Currently, expenses related to such market measures represent only 8% of total CAP expenditures, with a decreasing trend. Any new framework for market measures should establish news way to regulate markets, avoiding increased funding requirements while improving the successful function of free markets by mitigating the effects of extreme fluctuations on incomes.

With a more market-oriented EU agriculture, there is an even more acute need to strike the right balance between free markets and market regulation. With this objective, the post-2013 CAP considers the possibility of designing a new framework for market regulation in the EU, with emphasis on stabilising farmers' incomes and sheltering farmers, consumers and industries from the negative consequences of extreme market fluctuations. Accessible instruments for managing price risks to food processors and producers have performed well below the level required for coping with extreme (and unexpected) price volatility.

[4] EC Communication on "Tackling the challenges in commodity markets and on raw materials" Brussels, 2.2.2011. COM(2011)25 final.

As Bureau and Witzke (2010) write, “A reform of the Single Payment Scheme (SPS) should not be addressed independently from another central feature of the CAP, which is market regulation” (p.125). The introduction of new market instruments should be considered in conjunction with SPS reform. The viability and success of new risk management instruments depend on the relative importance of new payments in farmers’ incomes, as this instrument plays a considerable stabilisation role.

As has become clear in the last Public Debate launched by the European Commission regarding the CAP after 2013 (EC, 2010), there is a need for new instruments that grant the Commission some control over unexpectedly large price movements while ensuring minimal market distortion effects. However, potential market management approaches are subject to a number of constraints and limitations, and chief among these are the financial perspective for 2014-2020 and the possible agreements within the Doha Round of the WTO.

The single CMO considers some market management instruments, including internal market measures (minimum prices, private storage, production limitations systems, specific aid schemes, marketing standards, producers and inter-branch organisations), rules concerning trade with third countries (imports and exports) and specific market regulation rules. However, the recent crisis in the dairy sector has highlighted other issues requiring consideration, including rebalancing the market power among agents along the food chain and ensuring better supply-demand coordination.

During the last decade, a plethora of risk-management instruments have been analysed to assess their potential and efficacy within specific EU agricultural conditions (Meuwissen et al. 2008). Although the Single Payment Scheme is considered a powerful income support and has a non-negligible stabilising effect on farmers’ revenues, market interventions have been limited to a small number of products and have become less common. On top of this, more openness to world markets adds support for a new EU strategy for managing food markets via the post-2013 CAP.

Against this background of ongoing policy reform and debate, the objectives of this study are as follows:

a) to develop a qualitative analysis of the **insufficiencies** of the current CAP vis-à-vis the growing volatility of markets, and

b) to **propose a new and detailed market management framework** in the context of the CAP post-2013.

With the first objective in mind, a conceptual framework has always been required to establish what phenomena are to be deemed ‘insufficient’ and to clarify in what context, to whom, for how long and why they can be qualified as such. Towards this end, examples must be reviewed that describe crises and/or unmanaged market trends that should have had some kind of intervention to prevent the damage caused.

The second objective should define the framework(s) within which CAP post-2013 should set the rules for actively managing markets to achieve the desired market and income stability for EU agriculture. Such a framework can only be established by defining the principles and primary instruments that the European Commission can use to facilitate the stabilisation of EU farmers and markets. The principles should be sufficiently general for all EU sectors and countries. The differences among countries and sectors increases the

difficulty associated with designing a useful framework for the whole EU. An instrument that applies well to one sector's characteristics could be inapplicable to another's. Thus, the new market management should be flexible enough to be applicable to a broad array of situations, including alternative instruments with equivalent objectives.

At the same time, the instruments should be defined with enough detail that they can be analysed and judged based on their potential consequences and implementation difficulties. EU agriculture encompasses an extreme variety of sectors with markets that exhibit marked differences in integration, efficiency and depth. The Commission Communication (Nov 18, 2010) states: "The public debate revealed a broad consensus on keeping the overall **market orientation** of the CAP while also maintaining the general architecture of the market management tools. Indeed the 2009 dairy market crisis highlighted the important role that existing mechanisms play in supporting the market in times of crisis. However, some specific adaptations appear necessary, most notably in **streamlining** and **simplifying** instruments currently in place, as well as in introducing new policy elements with respect to the functioning of the food chain" (emphasis added). Based on these principles and whilst maintaining the current design of market management instruments, the present study considers the introduction of new tools aimed at better preparing farmers to cope with risks and crises and improving their standing within the supply chain.

1.2. Market crises versus price instability

Market crises are not well-defined episodes of sudden spikes or price drops and are hard to predict from past market records. Price instability is determined by various measures of volatility. When a market begins behaving abnormally, it is difficult to predict when and at what extent the anomalies will end. It may be a short-term shock with rapid regression to the mean, or it may linger for a prolonged period of time. Sooner or later, all food markets tend to regress to their long-term trend. During a good part of the 20th century, farm prices followed a downward trend (in real terms), but chances are that some of the most important commodities experienced slight upward trends (OECD-FAO, 2010).

Prolonged periods above or below the trend can have harmful effects on consumers or producers. Although consumers can adjust their eating habits to a sudden rise in the price of some basic products, producers need more time to adjust to prolonged periods of low prices. Producers are accustomed to sell at prices below total costs from time to time, but they can only sustain this situation for a limited period of time. Therefore, the duration of a market crisis is a key consideration for developing effective policies.

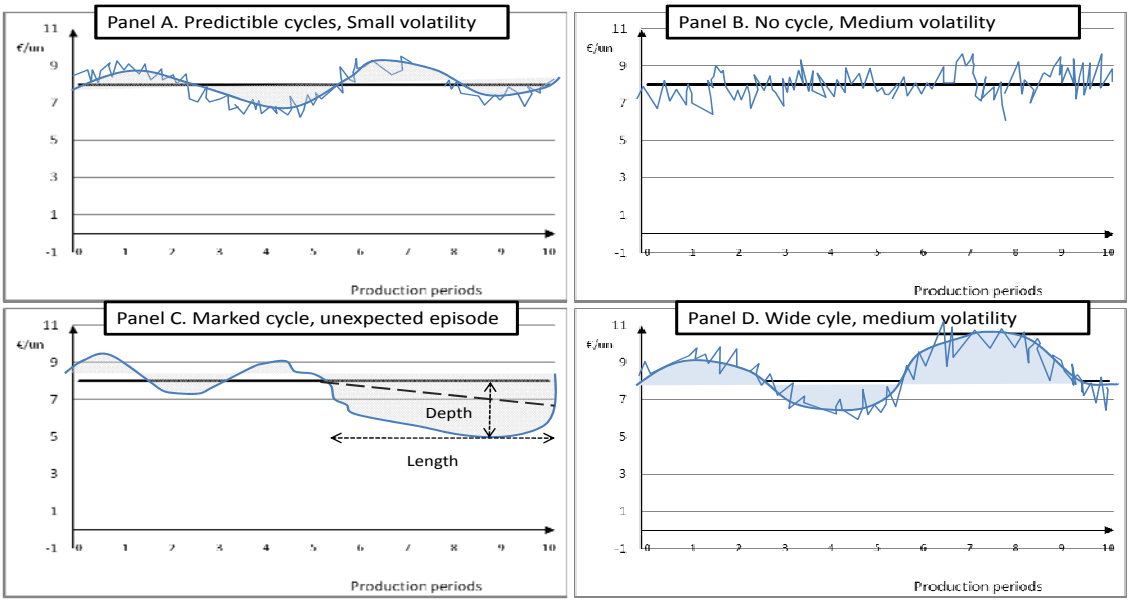
Price changes always contain crucial information. However, it is almost impossible to process this information ex–ante and react quickly and rationally to abnormally unstable arket signals. This applies to producers as well as to market intelligence experts and government agencies in charge of executing market management programmes.

Figure 1 shows four potential situations that resemble recent agricultural markets. The horizontal axis represents production periods encompassing an entire season (as in annual crops), three-month periods (as in lettuce production) or three years (as in pork production).
Panel A in Figure 1 represents a sector with a predictable cycle and some internal volatility. Panel B represents a market with no cycle and medium volatility. Panel C represents a situation similar to Panel A, except for the length and depth of the fourth cycle and the small volatility. Panel D is a market with marked cycles and medium volatility.

Panels A and B represent situations that entail normal business risks and therefore offer little rationale for government intervention. By contrast, panels C and D depict situations in which the gains and losses are not compensated within the whole period, and farmers cannot cope by themselves; therefore, panels C and D represent conditions in which there may be a role for market interventions. In Panel D, the combination of medium volatility and a wide cycle may be a symptom of poorly integrated markets and the inflexible and therefore inadequate response of producers to demand surges (requiring production increases) or to demand declines (requiring production curtails). In addition, within-cycle volatility may add a further dimension of risk to producers that hinders their response to the long cycles.

Panel C perhaps offers the most rationale for government intervention, with some caveats further developed below. In Panel C, the trend should be revised downwards, as depicted by the dashed line, perhaps because of consumers' changing habits, but it nonetheless depicts a situation that could be considered a crisis.

Figure 1. Sketch of four likely situations within agricultural markets



It is by no means easy to define "excessive" volatility or a related "crisis". Price volatility affects agriculture in several ways. It increases the risk premium attached to investments and hence may impair overall agricultural growth and productivity. Similarly, price volatility in a value chain could increase the risk of contracts, resulting in larger risk premiums and margins. Finally, given that many (especially EU) farmers operate under low profit margins, market price volatility could lead to disproportionate income variations.

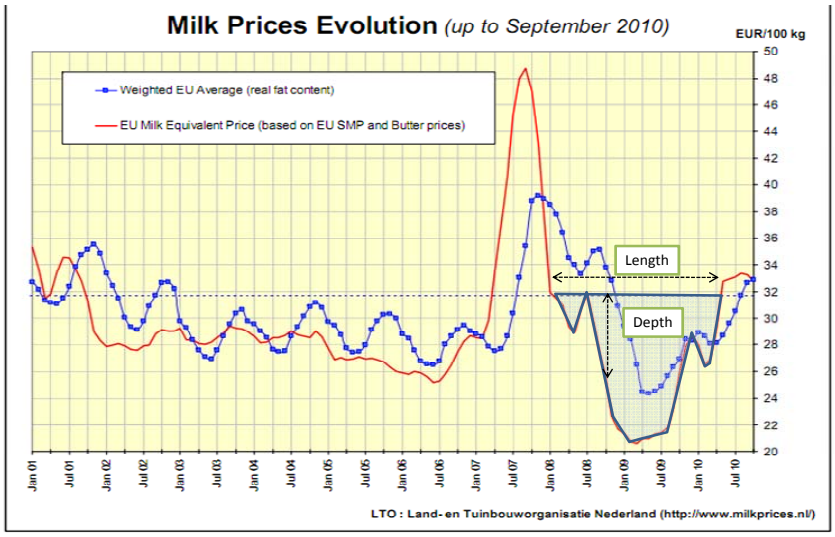
Market volatility or instability refers to period-to-period changes in indicative summary market variables (such as prices). Such instability is due to unpredictable changes in market fundamentals (such as production costs and volumes, demand, government policies, macroeconomic factors, etc.) that change the perceptions of market participants regarding the current and future values of a given commodity. Such instability is common

to all agricultural markets. To successfully navigate market instability and spikes, one must first comprehend the forces that determine market volatility and unpredictability (see Box 1) and market participants' behaviour under conditions of unpredictability.

Box 1. The case of milk prices

The milk sector underwent a two-year period of crises that followed a period of extremely high prices. The peak in July 2007, the drop during 2008 and 2009 and the length of the period were impossible to predict based on previous prices.

Figure 2. Milk prices



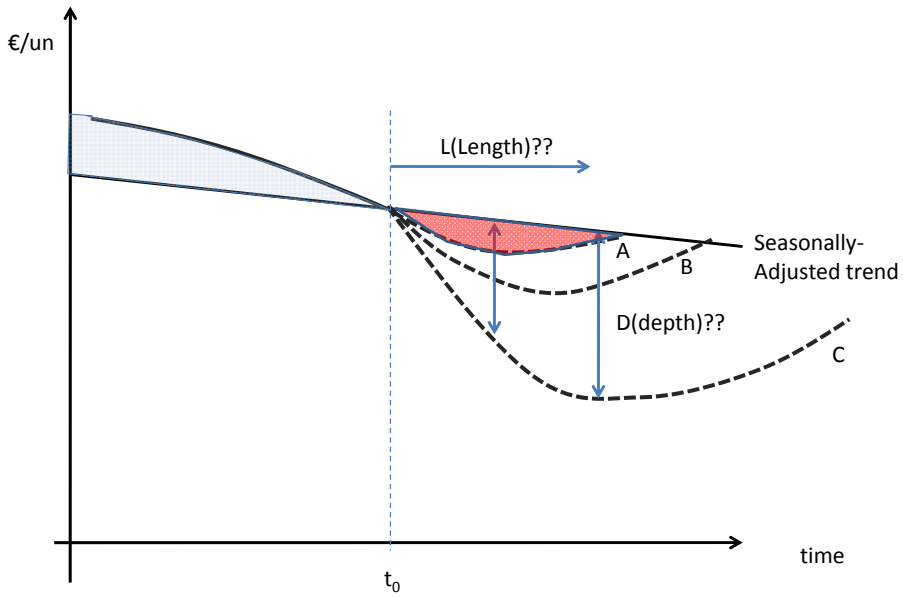
Among the seven recommendations of the High-Level Milk Group, the following concern market management:

- Collective bargaining power of producers: A possible proposal for a provision allowing producer organisations consisting of dairy farmers to jointly negotiate their contract terms, including price, with a dairy. Whether permanent or temporary (but sufficiently long), the provision should be subject to review.
- The possible role of inter-branch organisations in the dairy sector: Examination of whether any of the current provisions for inter-professional organisations in the fruit & vegetables sector could also be applicable to the dairy sector.
- Transparency in the dairy supply chain regarding both prices and volumes.
- Market measures and futures: Consideration of "green-box compatible" instruments to reduce income volatility, including possibly facilitating the use of futures markets, in particular by targeting training programmes.
- Marketing standards and origin labelling
- Innovation and research

1.3. Market Instrument features

Measures to avoid crises and sudden price drops/peaks must be activated gradually and preemptively. There must also be measures that can be activated to compensate farmers for crises that, because of their severity and duration, could not be avoided. This requires developing protocols that are sector-specific and that allow categorisation of market situations and pre-arranged actions. Two variables should be considered: the length of the period during which the price drops below its long-term seasonally adjusted trend, and the difference between the trend and the current price. Consider the three situations depicted in Figure 3.

Figure 3. Different and uncertain price trajectories

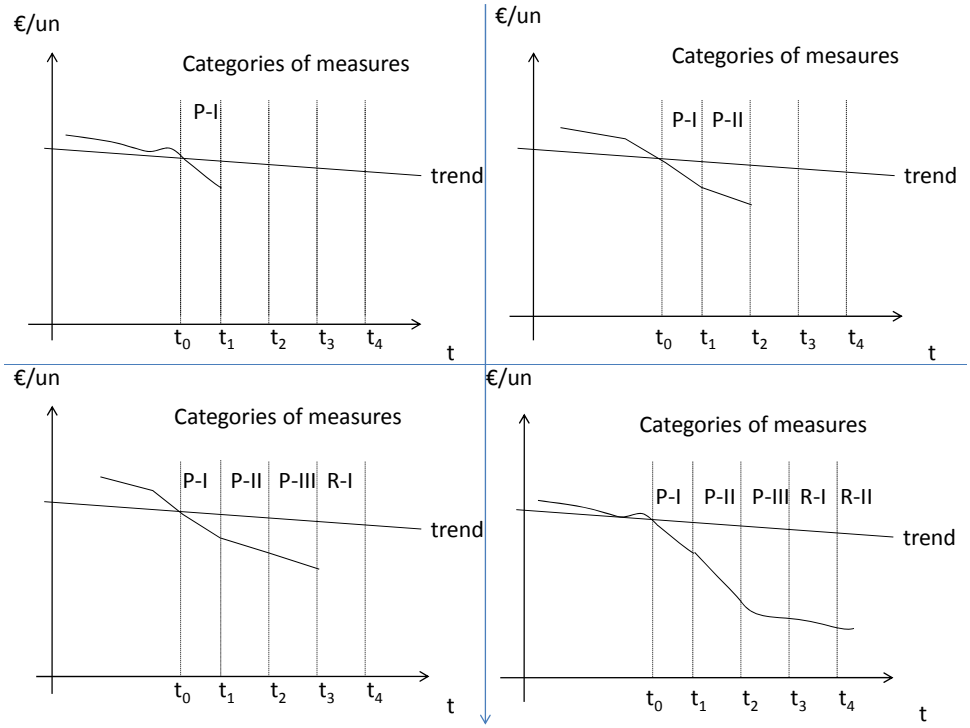


At time t_0, which crosses the seasonally adjusted trend, the relevant price of a commodity starts falling. It may follow trajectory A, B or C. A is a mild price drop, B is a serious price drop, and C is a severe crisis that is potentially harmful to producers. The magnitude of a crisis could be evaluated as the area below the trend (marked in pink for trajectory A) added to the area above the trend (marked in blue). In situation B, producers may or may not have accumulated enough revenue to cope with the serious price decline, although on average both areas may cancel each other. Trajectory C clearly depicts a situation in which previous gains could not make up for the losses. Situations similar to C can occur as a result of a combination of unfavourable but not extremely unlikely factors. Market-oriented producers should not expect support in type A situations, should expect some help via risk-management instruments in type B situations, and should expect significant support in type C situations. Note, however, that at t_0, it is impossible to anticipate the length and depth of the depressing cycle.

Market measures include initiatives and programmes that must be prepared for each of the three schematic situations. In the following graph (Figure 4), Ps represents proactive measures, and Rs refers to reactive measures. Proactive measures help farmers prepare to cope with or avoid risks and/or crises. Reactive measures are public interventions designed as last resorts to lessen the length of crises. A succession of measures is meant to manage situations like C, shown in the previous graph. Romans, as in P-I, P-II, or R-I, indicate

situations where different measures are activated or triggered. Periods t_1, t_2, … should be set based on the production structure, the season length and the biological processes relevant to each sector.

Figure 4. Gradual deployment of proactive and reactive market management measures



As prices evolve, Programmes P-I, …, should ideally be pre-activated according to preset rules and length-depth features. It is recommended that, should measures P-I, …, and R-I, …, require the implementation of financial contributions, the proportion contributed by the producers should be reduced as the protocol moves from proactive to reactive measures. Correspondingly, as prices rise above the trend, farmers are expected to be able to build reserves to cope with future unfavourable situations. Increasing EU budget flexibility should help to implement programmes with strategic necessities that cannot be anticipated.
In short, smart market measures should combine incentives to enable growers to cope with mild and moderately important price drops and programmes that aim to (i) diminish the length and depth of the declines, and (ii) in the event the proactive measures fail, help farmers rebuild their financial health after severe crises. In this analysis, it is assumed that crises cannot be completely avoided.

Each major sector should devise a plan comprised of a number of measures to be implemented in a timely manner, taking the following considerations into account:

- The fact that prices respond to fundamentals (demand and supply) and agents' expectations.
- The value added of community action.
- Cost-effectiveness.
- The benefits to the consumers, particularly the poorest among them.
- The impact on world markets.
- The avoidance of distortions and price–signal perturbations.

- A fair distribution of revenue along the market chain.

1.4. Importance and distinction of agricultural markets' volatility and crises

In food-commodity markets, there have been five periods of sudden price increases (and subsequent declines) in the last forty years (1973-75, 1978-79, 1986-87, 1995, and 2007-8) that may be termed extraordinary, and of these only the one from 1973-75 was of comparable magnitude to the most recent one in 2007-8.

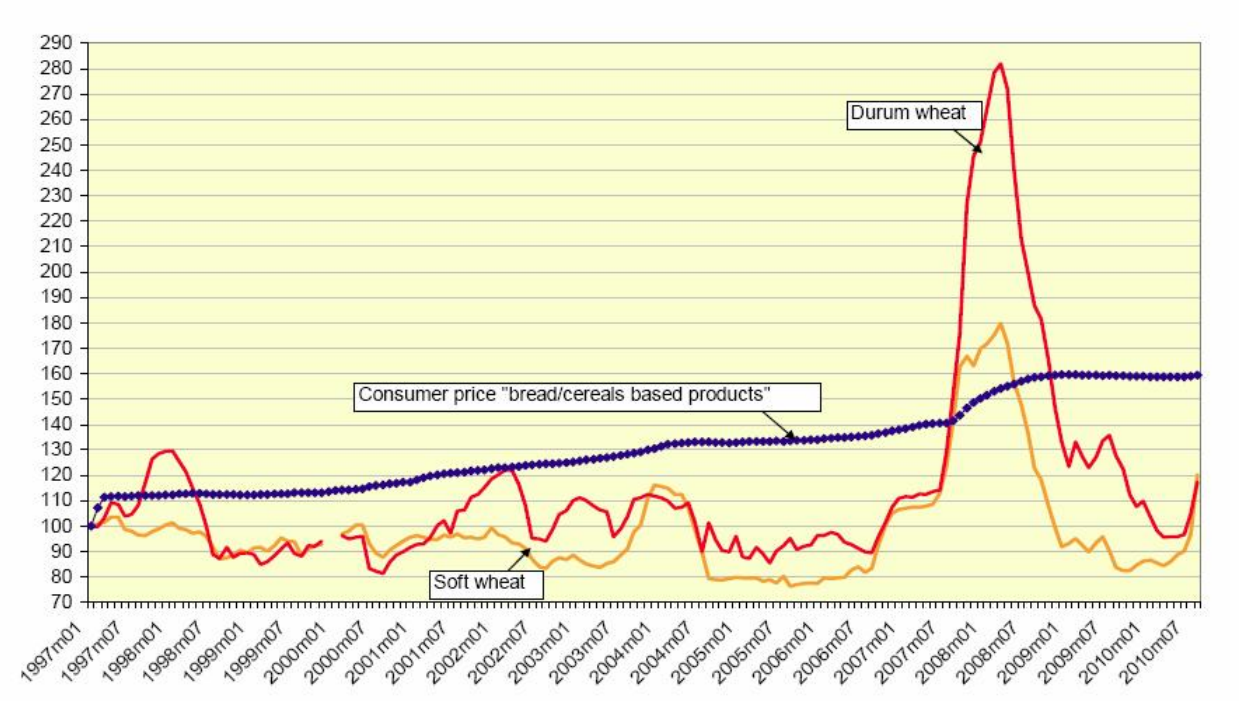
There have been many analyses of the recent food-price surges (Abbott, et. al. 2008; von Braun et al., 2008; Mitchell, 2008, Gilbert, 2010). Recently, Headey and Fan (2008) assessed the various explanations and factors that have been proposed to explain the food price surge of late 2007 and 2008 and found that, among the many factors proposed, only a few are consistent with the underlying facts of the crisis. However, market volatility is not only about a single event of sharply rising commodity prices. It is about a continuing pattern of unpredictable changes in prices, both positive and negative. It is this unpredictability that affects medium- and long-term investments and hence patterns of production as well as consumption.

Recently, agricultural commodities have experienced substantial price changes in the EU. For instance, the prices for soft wheat in the EU member states (MS) changed to various extents between August 2009 and August 2010, from a low of 7% and 9% in Slovenia and Portugal, respectively, to a high of 72% and 76% in Germany and France, respectively (the EU average change was 44 percent). The EU average price change during the same period was 39 % for maize, 40 % for barley, 33 % for SMP and 41 % for butter, with significant variations among MS. Conversely, over the same period, the average price change for durum wheat was -8%, for beef -1%, for pork -3% and for poultry 4%, again with significant variations among MS[5]. Two things are clear from these recent developments: first, price changes are not uniform across agricultural commodities; and second, price changes are not uniform across EU MS. It is thus difficult to talk about a EU price spike when price developments are different in various MS.

However, consumer prices for various food items that are related to these commodities change by far less than the commodity prices. For instance, during August 2009-2010, the EU average consumer price for bread changed by 0.2%, for meat by -0.1%, for milk, cheese and eggs by 0.5%, and for oils by 2.9%. For all food, the change was a mere 1.8%. Clearly, the large commodity price changes are not reflected in final consumer prices. This implies that the major absorption of the price swings takes place at levels in the food chain close to the producer; hence, the producers are most vulnerable to food commodity price shocks. Figures 5 and 6 illustrate this for two value chains within the EC market during the period 1997 to 2010: cereals and cereal-based consumer products (represented as indexes of nominal prices), and meats and consumer meat products. It can be seen that the price fluctuations are much larger at the commodity level of the final product. Similar figures apply to other food-product groups, such as dairy (see Box 1).

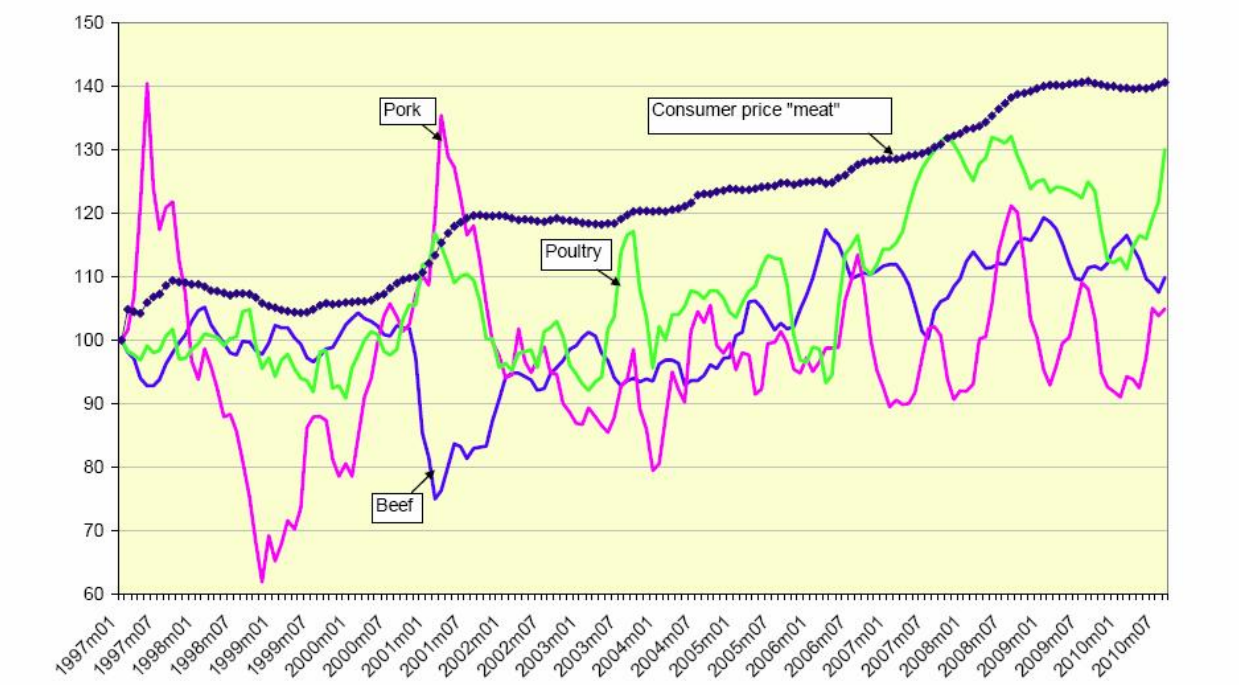
[5] Source EC DG for Agriculture and Rural |Development. CM D(2010) 785171.

Figure 5. Cereals/bread and cereal-based products: EU agricultural market and consumer price developments (Jan 1997 to Aug 2010; Jan 1997=100)



Source: AgriView, Eurostat.

Figure 6. Meat, EU agricultural market and consumer price developments (Jan 1997 to Aug 2010; Jan 1997=100)



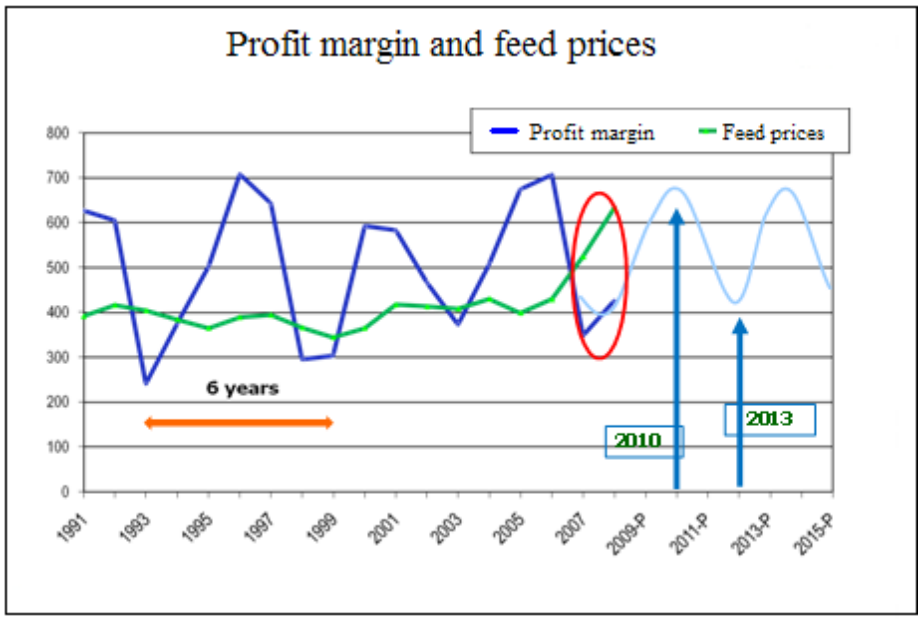
Source: AgriView, Eurostat.

The pig cycle is normally determined by pork prices, which are based on supply-demand conditions. In addition to pork prices, commodity prices (feed prices) can also influence the cycle because of their relatively high share (about 50 percent) within the overall cost

structure. Until 2007, commodity prices for players within the pork supply chain were relatively stable and therefore did not exert a significant influence on the pig cycle. However, because of recent circumstances, the commodity prices have become more volatile, and the question arises as to what effect these increased commodity price volatilities have on the length and amplitude of the pig cycle.

The pork industry faced relatively high feed prices in 2007, which seriously affected pig production, most notably because of the incentive to sell the grains instead of feeding them to the animals. Figure 7 presents the Dutch profit margins of pig farms and the increased feed prices. It is clear that the feed prices began to increase rapidly in 2006. The prices for corn, soybean, wheat and barley increased substantially throughout Europe (Beek, 2007), followed by a subsequent decline in 2008. In 2009, the prices of commodities showed an upward movement again. High feed prices resulted in high input prices; meanwhile, because of the economic crisis, among other reasons, the pork meat demand declined worldwide (Clark, 2009). As a consequence, an oversupply of pork occurred on the market, causing low meat prices in many countries around the world. Thus, the increased volatility of commodity prices may have a remarkable effect on the pig cycle both in terms of the length and the amplitude of the cycle. This causes the future level of the "normal business risk" to be uncertain, potentially affecting credit availability and investment levels.

Figure 7. Profit margins and feed prices in the pig sector in the Netherlands (Rabobank, 2009)



There is controversy surrounding the issue of whether the price volatility of agricultural commodities has increased. Although popular views suggest that it has, some recent analyses suggest a mixed picture. Gilbert and Morgan (2010) examined the price volatility of 19 internationally traded agricultural commodities during the period 1970-2009. When they compared the two twenty-year periods in this range, they found that volatility had statistically and significantly increased in only three commodities (rice, sorghum and bananas), whereas it had significantly fallen for 9 commodities (cocoa, sugar, soybeans, groundnut oil, palm oil, soybean oil, beef, lamb, and fishmeal) and showed insignificant changes for the other commodities.

Concerning prospects for future volatility, Gilbert and Morgan (2010) assessed a range of factors and determined that three were likely to have a positive impact on volatility (demand for food crops for biofuel feedstocks, futures market speculation, and underinvestment in agriculture), whereas other factors, such as inventory levels, climate change and price transmission, were likely to have only minimal influences on future volatility.

Balcombe (2010) also found conflicting evidence regarding the volatility trend of agricultural commodities. He found that the volatility trend depended on the volatility of several explanatory variables, such as the petroleum price and the US dollar exchange rate. On the other hand, EC analysis[6] suggested that the historic volatility of several agricultural commodities has increased in the most recent decade or so. Matthews (2010) also found that, within the EU markets, price volatility seems to have increased over time, and it is now higher than world market volatility for some commodities.

Theoretically, the volatility of commodity prices should be larger when the commodity price level is larger (implying shortage of the commodity and hence a larger reaction to any news about fundamentals) and when stock levels are smaller (implying a smaller buffer against any short term supply/demand disturbances). An EC published analysis indicates that volatility in the most representative international market for wheat, namely the Chicago Mercantile Exchange (CME), appears to have increased over time. It also indicates that higher nominal prices are normally but not always associated with higher volatility.

Another rather less obvious indicator of market volatility is what has been termed “implied volatility”. Implied volatility represents the ex-ante assessment of the market regarding possible changes in subsequent prices. It cannot be observed directly but can be readily inferred from contracts with prices that depend on such assessments. Such contracts are options on future price developments. An “option” gives the buyer the right to sell a commodity (put option) or buy a commodity (call option) at a specified price and at (or before) a specified future date. The price of an option depends on the expected price movement over the period of the option, and it is this feature that permits the inference of the future movement of the commodity price from underlying market-determined uncertainties or volatilities. Clearly, the more uncertain the market agents are about the subsequent development of the commodity price, the higher the option price will be.

Irrespective of whether price volatility has increased or not, the incomes of EU farmers do not necessarily have to become more variable. This is due to the presence of the SFP in the EU, which gives a measure of stability to farm incomes, as appears to have been the case in the post-2000 period compared to the 1990s (European Commission, 2008). Moreover, the impacts of market risk exposure on EU farms are far from homogeneous (Vrolijk and Poppe, 2008; Berg et al., 2008). The abilities of farms to cope with adverse economic conditions vary significantly across countries and farm types. A number of surveys show that the demand for risk management instruments is also heterogeneous. Many studies have shown that price volatility is the leading concern of farmers regarding risk.

[6] EC DG for Agriculture and Rural Development Directorate L. Economic Analysis and evaluation. L5 Agricultural trade policy analysis note of 16/07/2009 on Historical Price Volatility.

1.5. Implications for CAP market management instruments

Given the above discussion, one can identify three types of relevant indicators that could be utilised by the EC to manage excessive market price instability. The first pertains to the nominal prices of the relevant commodities in each specific market. An indicator could be designed around specific price ceilings and floors which, when breeched, would call for market intervention. This is the simplest type of indicator, and it has been utilised in the past. However, it has a weakness in that someone must specify the relevant price bands, and this is invariably both technically difficult and highly political.

Ideally, to determine an index or measure on which to base a trigger for activating interventions to manage commodity market volatility (see Figure 4), one would want an estimate of the underlying equilibrium average market price for that commodity for each period and a probability distribution for the prices around this average for each period. An appropriate price band could be defined that could be revised once every so many periods, depending on the probability distribution. Over time, the band could change as the underlying average price changed and/or as the probability distribution changed. Unfortunately, such variables are quite difficult to estimate and, if estimated, are subject to considerable errors. Furthermore, it is difficult to predict/estimate changes in the underlying trends and to distinguish them from temporary shocks. A recurrent mistake in past programmes has been to interpret a temporary price spike or price decline as a permanent shift, with the consequence of misapplying market interventions aimed at changing market fundamentals.

A second type of useful market indicator could be an estimate of observed market volatility. This indicator could be built around observed changes in the prices of certain basic commodities in given markets relative to changes observed in the past. Large and persistent deviations of the observed changes from past averages could be used as triggers for intervention. Of course, one would have to define the frequency of price observations (daily, weekly, etc.), the period of time over which changes must be observed before intervention is triggered, the way changes are measured and the amount of deviation beyond which measures should be taken. Such indicators have not been utilised in the past, but they seem relevant for dealing with market volatility. Considerable work would be required to explore (ex-post) the types of interventions that would have been triggered in the past if such indexes were used.

A similar type of market indicator could be built around the observed implied volatilities of some commodities. However, given that such indicators must be inferred from options prices in organised exchanges and given that such trading is quite limited in the EU, it seems that this type of indicator would be less useful.

The third type of market indicator could combine price levels with indexes of volatility. In other words, one may stipulate that prices that change considerably but slowly are not grounds for market intervention, as the market may be reacting to slowly evolving fundamental forces that are, to a large degree, predictable. However, large and sudden changes in prices may reflect market disorientation about the fundamentals and hence erratic and potentially wasteful reactions to unpredictability. In such cases, intervention may be used to attempt to restore market confidence in the fundamentals and to reduce unpredictability in subsequent price evaluations.

Concerning the issue of what may be termed “excessive”, it appears that EU farmers and consumers have a range of options to deal with normal market fluctuations. Only unusual market events, for instance, market upheavals that may occur once every twenty years or so, are particularly unpredictable and may therefore require additional policies. Such infrequent events may be characterised by “cognitive failures”, namely, the inability of private agents to identify the true risks and hence to make plans accordingly. These are the kinds of events that may justify security-related, emergency interventions.

2. INSTRUMENTS (market measures)

2.1. Instruments to improve markets' functioning and performance

KEY FINDINGS

Contractual mechanisms in the food supply chain

- The standardisation of written contracts may be an efficient means to reducing transaction costs, defending producers' rights and eliminating unfair practices in the FSC. The establishment of Monitoring Committees and a transparent mechanism for conflict resolution is crucial for success in this regard.

- The promotion of written contracts may be particularly relevant within non-processed food supply chains in which acute tensions have been identified in relation with perishable products.

- Codes of conduct listing "good practices" may help to promote fair relationships in horizontal and, especially, vertical relations. The approach should be voluntary, and adhesion could be promoted and recognised through a certification mechanism.

Competition rules

- Better market management through better supply-demand information is compatible with the competition rules. On the contrary, measures that might discriminate against imports or price-fixing agreements are not compatible with competition rules.

Producer Organisations

- Size matters: bigger cooperatives are getting bigger as a result of concentration, development of higher value added products, improved market positioning and overall strategy.

- Wide differences in size and organisation can be found both at the product and Member State level. For instance, the rate of concentration remains much lower in new MS and Southern Europe. In addition, inefficient structures have been reported in the non-processed food supply chain where supply concentration and better organisation is most needed.

- Encouraging POs has facilitated the structural adjustment of the F&V supply chain by promoting the adoption of strategic approaches (versus mere grouping of produce).

- The co-op model improves vertical coordination through the development of quality policies, private standards, conformity and other certifications that cannot be implemented by individual producers.

Inter-Professional Organisations

- The activities of the IPOs should be defined in accordance with the specificities of each sector.
- At the EU level, only a limited number of sectors are authorised to create an IPO; however, examples from France, Italy and Spain show that there is no reason to restrict IPOs to selected productions.

Among its objectives, the Commission Communication "The CAP towards 2020" includes improving the competitiveness of the agricultural sector and enhancing its value in the food chain. A more balanced food supply chain is needed to improve the economic results of agricultural farms. Farmers' share of the value added generated in the food supply chain has decreased from 29% in 2000 to 24% in 2005, whereas the share of the industry, wholesale and distribution have all increased during the same period[7]. On the other hand, an imbalance in bargaining power between farmers and other actors along the chain has been identified as a source of unfair practices like late payments. A lack of transparency in price formation, fragmentation of the internal market, cross-country price discrepancies and asymmetric price transmission have also been reported (Bukeviciute et al., 2009).

In this section, we analyse measures that can contribute to a better functioning of markets and improve the farmers' position in the value chain, with particular attention to standard contracts, competition rules, codes of good practices and the role of Inter-Professional organisations (IPOs) and Producer Organisations (POs).

2.1.1 Contractual mechanisms

Contractual mechanisms within the food supply chain (FSC) are highly diverse, ranging from horizontal agreements to vertical integration practices. There are at least three main reasons to use a formal contract: (i) to share or to transfer risk; (ii) to organise the production of products with specific characteristics; and (iii) to solve 'hold-up' problems because of specific investments.

The use of written contracts may be particularly relevant within non-processed food supply chains, which are characterised by highly atomised suppliers and strong buyers compared to processed food supply chains, which have a more concentrated supply side (Cesarini, 2009). Indeed, acute tensions have been identified in relation to perishable products.

[7] COM (2009) 591 of 28/10/2009, "A better functioning food supply chain in Europe".

Box 2: Hold-up problem in the Food supply chain

A hold-up problem arises as soon as production requires specific investments. The producer is then highly dependent on the buyer, as it is generally difficult to find another buyer. This difficulty is reinforced by the local concentration of processors and by the cost of transportation (which ultimately defines the zone where the producer can sell her product). For example, a dairy producer has many investments that are specific to dairy production and generally has very few processors. Even if milk processing is not highly concentrated, it is not practical to transport milk over long distances; thus, a given farmer has only a few potential clients. In the absence of relevant commitments from processors, producers might prefer to abandon milk production. It is thus also in the interest of processors to develop contracts to provide incentives for farmers to continue producing milk. From a processor's point of view, it may be beneficial to have contracts to better adjust supply to anticipated demand (within the year or on a longer term),[8] to manage quality requirements, and to stabilise upstream producers (as frequently changing producers might be costly).

The standardisation of contracts involves defining a contract form and determining the basic elements that should be in the contract. The objective of standardising contracts is to ease negotiations, reduce transaction costs, better organise market transactions and minimise unfair practices.

Given the high degree of heterogeneity within different sectors and even subsectors, a "one size fits all" scheme is not applicable, and contracts should be adapted to the specific needs of each product or sector. In any case, the contract should be written in advance of deliveries, and possible elements to be included could include the following: (i) the identification of parties and the time period to which the contract refers; (ii) the object of the contract: volume, quantity, quality and place and timing of deliveries, among other commercial details; (iii) price and conditions of payment and (iv) conflict resolution details.

Establishing a reference price index within a standard contract may be in breach of competition rules. There is an ongoing debate on the convenience of establishing price adjustment formulas to be calculated by independent agents, taking into account prices in forward and backward links (such as fertilisers and petrol). However, competition authorities have already noted that this would restrict market competition because all operators would be obliged to update prices at the same time. To be competitive, prices should be freely negotiated between parties (CNC, 2010).

The recent milk proposal provides for optional written contracts between milk producers and processors to be drawn up in advance of deliveries and to include details regarding the price, timing, volume of deliveries, and duration of the contract. Member States can make use of the contracts that are compulsory in their territory. To take into account the specific nature of cooperatives, these are not required to have contracts if their statutes include elements with similar effects.

[8] For example, in the dairy sector, some firms provide incentives for farmers to produce at a particular time of year to better utilise their capacities; some other firms provide bonuses to farmers who announce in advance their anticipated production and whose production is close to their prediction.

Some Member States have established monitoring committees as legal entities that play an important role in guaranteeing the success of the standardisation process[9]. These are responsible for monitoring the approved contract. In the case of Spain, interested operators participate in the committees, with both parties having equal representation.

2.1.2. Competition rules and collective negotiation

The Treatment on the Functioning of the EU (TFEU) prohibits collusive behaviour (Art. 101) and abuse by the dominant party (Art. 102). This legislation applies to all sectors, including the farming sector, except for those practices that are required to comply with specific laws (e.g., Single CMO).

Articles 175 and 176 of EC Regulation 1234/2007 consider several exemptions for the agricultural sector; however, given the demanding conditions, these exceptions are hardly applicable[10]. In practice, collective negotiation is limited to agreements that simultaneously fulfil the following conditions: (i) the negotiation is between farmers or groups of farmers, (ii) the negotiation pertains to a single MS, and (iii) the negotiation involves sharing production processing or joint marketing facilities. The exemption would be considered case-by-case, carefully balancing efficiency enhancement with any anticompetitive effects. It should be stressed that price fixing at any level of the chain is very likely to be prohibited. The issue is related to a clause that allows for derogations (to article 101) in the case of agreements necessary to fulfil the objectives of the CAP[11]. To derogate article 101, one must demonstrate that a specific rule is needed to attain the five objectives. In a static framework, it is almost impossible to meet the five objectives. In a dynamic analysis, this might be possible if the rule is required to generate efficiencies and productivity gains that can benefit upstream producers as well as final consumers. The example of the French beef case illustrates the issue well (cf. Box 3).

Box 3: **The example of French beef**

In late 2000, the demand for meat in the EU was greatly affected by the 'so-called' BSE crisis. To sustain prices, in October 2001, six federations of beef farmers and slaughterers reached an agreement to set a minimum purchase price for certain categories of cattle and to suspend imports of beef into France. The agreement can be interpreted as the formation of a "crisis cartel". After the agreement, the prices were about 10 % to 15 % higher than the prices the previous week. The competition authority concluded that '*the agreement is not necessary in order to achieve at least four of the five objectives of the common agricultural policy* and decided that it infringed Article 81(1) of the Treaty. Accordingly, the six federations were fined.

The competition framework limits the possibility of collective negotiation in the absence of shared facilities. There is considerable debate surrounding the interpretation of these rules and a possible amendment of these rules to allow for a more flexible approach in the agricultural sector.

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[9] Since 2000, Spain has reached consensus and implemented standardised contracts. In parallel, Contract Monitoring Committees have also been established to ensure adherence to fodder, fruit, vegetables, potatoes, tobacco and milk contracts.

[10] e.g., beef meat in France (see Box 4), raw tobacco in Spain (Sanchez, 2009).

[11] As set by Article 39 of the TFEU, the five objectives are as follows: i) to increase agricultural productivity; ii) to ensure a fair standard of living for the agricultural community; iii) to stabilise markets; iv) to assure the availability of supplies; and v) to ensure that supplies reach consumers at reasonable prices.

The recent milk proposal enables producers' organisations to collectively negotiate contract terms, including price. This provides a very important legal basis by which to circumvent competition rules. Appropriate quantitative limits are set at 3.5% of global EU production and 33% of national production, and specific safeguards are also provided to avoid serious prejudice, particularly with regard to SMEs. In addition, a limit of 33% of the total combined national production will apply to transnational cooperation agreements. This legal provision is temporary and subject to assessment.

The implementation of Article 102 of the TFEU that prohibits abuse by the dominant position has been limited for a number of reasons. First, it does not necessarily imply a restriction to competition and thus does not always preclude the intervention of competition authorities. Second, the application of this article encounters insurmountable problems pertaining to proving dominance or abuse. In terms of evidence, the cooperation of producer organisations is a key issue given the impracticality of an individual producer providing incriminating evidence against a company on which most of his business depends.

This situation has triggered legislative responses in many Member States, including the adoption of laws regarding unfair trading practices or abuses of contractual dependency that aim to subdue the behaviour of the powerful contracting party (e.g., Austria, Belgium, France, Hungary, Germany, Greece, Italy, Ireland, Latvia, Portugal, Slovakia) and the introduction or envisaged adoption of codes of good practice establishing a set of rules for transactions between large retailers and their suppliers (e.g., Czech Republic, Hungary, Lithuania, Portugal, Romania, Slovakia, Spain, UK) (COM, 2009).

Codes of conduct list "good practices" aimed at promoting fair relationships in horizontal and, particularly, vertical relations. The approach should be voluntary, and adhesion could be promoted and recognised through a certification mechanism. According to a recent Commission study, late payments have a significant economic impact (as cited in Cogeca, 2009).

2.1.3. Producer Organisations

A producer organisation (PO) is a group of farmers who act together to strengthen their position in the market. Many of these groups are cooperatives, but POs can also be groups of individuals or groups of companies formally incorporated in a registered PO. POs' objectives are as follows: (i) ensuring adequacy of production with market demand in terms of quantity, quality and traceability; (ii) concentrating supply and marketing the production of the members; (iii) reducing production costs and stabilising producer prices; and (iv) promoting environmentally friendly cultural practices.

The Cogeca report (2010) highlights the fact that "bigger cooperatives are becoming bigger". There has been an increase in turnover volume in the top Cooperatives as a result of concentration, development of higher value added products, improved market positioning and overall strategy. This trend is particularly relevant in Northern EU countries. Indeed, differences exist in cooperatives throughout the EU-27, and the sharpest difference is their size and organisation. Although cooperatives in Northern Europe tend to favor the full merger of entities in their concentration process, the rate of concentration remains much lower in parts of Southern Europe, where this process is achieved through the creation of second- and/or third-degree ("federated") cooperatives. In particular, inefficient structures have been reported in the non-processed food supply chain where supply concentration and better organisation is most needed.

Encouraging the formation of POs has facilitated structural adjustment in the F&V supply chain by promoting the adoption of strategic approaches (versus merely producing) and improving vertical coordination through the development of quality policies, private standards, conformity and other certifications that are more easily implemented by POs than by individual producers. The main areas of progress pertain to environmental objectives, quality and product value and improved market orientation, whereas moderate progress has been attained with regard to the supply concentration objective (Duponcel, 2006).

A distinction has to be made between those POs that share commercial and joint production facilities (the co-op model) and those POs that only share pure commercialisation agreements. Measures to promote the co-op model may render important benefits in terms of reducing tensions in the food chain, rebalancing the bargaining power, avoiding unfair practices, and capturing efficiency gains and a higher share of value added through vertical integration.

The fruit and vegetable CMO, defined in Regulation (EC) No 1234/2007, identifies the main objectives of the POs: concentration of supply, marketing of their members' products and managing the products of the farms involved.

These objectives are reinforced by the ability of POs to identify more specific goals and achieve them through the development of Operational Plans. Operational programmes will contain two or more of the objectives stated in Article 3(1)(c) or of the following objectives: (a) planning of production; (b) improvement of product quality; (c) boosting the commercial value of products; (d) promoting the products, whether in fresh or processed forms; (e) implementing methods of production that respect the environment, including organic farming; and (f) preventing and managing crises.

Crisis Management's programmes will be organised through Producer Organisations (50 percent financed by the Community budget). Tools include green harvesting/non-harvesting, promotion and communication tools in times of crisis, training, harvest insurance, help in securing bank loans and financing of the administrative costs of setting up mutual funds. POs can make withdrawals with 50 percent co-financing. Withdrawals for free distribution to schools and charities will be 100 percent paid by the Community. Community aid to POs will remain limited to 4.1 percent of the total value of marketed produce, but this may rise to 4.6 percent provided that the excess is used only for crisis prevention and management. For three years, state aid may be granted to extend crisis management measures to non-members who enter into a contract with a PO. Compensation for non-members will be no more than 75 percent of the Community support received by PO members[12].

The subsidy for withdrawn production is low and somewhat unconnected to the regular prices among the different products (16 products have price indemnities fixed by the Commission, and Member States set the other prices). This subsidy is in the range of 20-30% of the market price, on average, although higher for citrus fruit and lower for other products. As a result, very little production is withdrawn. Potential withdrawals destinies include the following: destruction, composting, animal nutrition, free distribution to charities and NGOs. Food Banks have argued for permanent agreements, but that does not constitute a flexible or proactive mechanism. In the period from 2004/05 through 2006/07,

[12] This paragraph summarises the Pos' options for crisis management and has been taken from the Commission's web page: http://ec.europa.eu/agriculture/markets/fruitveg/index_en.htm.

destinations of withdrawals were as follows: composting and biodegradation, 63%; animal feed, 19%; free distribution, 9%; and distillation, 7%.

In Almería, by far the largest vegetable exporter province in Spain (with 2 billion EUR in total value in 2008), only 43% of production is managed by the 42 POs (Parra Gómez & Cabrera Sánchez, 2010). This percentage has not grown from 1999 to 2008, although the total value exported has increased in nominal terms from EUR1.6 billion to EUR2 billion. As shown in Table 1, POs in Almería have changed the objectives of their operational programmes but have never used them for crisis management actions.

Table 1. Distribution of actions (in number) of the operational programmes among selected POs in Almería

	1999-2003	2004-2008	2009
Personnel	11	17	15
Crop protection products	35		
Packaging	12	10	7
Investments	22	23	31
Seeds		22	
Plastic			6
Grafted plants			6
Other	20	28	35

Source: Parra Gómez & Cabrera Sánchez (2010).

Attempts have been made to help POs stabilise farmers' revenues. For instance, strawberry POs in Spain had a subsidised option to insure against market value losses resulting from climatic hazards. However, the insurance policy had very little penetration and was finally abandoned (See Box 4).

Box 4: Attempts to insure production in the Spanish strawberry sector

The Combined Insurance Policy for Strawberry production in Cadiz, Huelva and Seville was introduced in 2002. This policy was intended to provide an adequate response to the needs of a significant part of the production sector (CAP, 2003). The geographical range of application of this product was restricted to the regions within which almost all strawberry production was concentrated, which are located within these three provinces of Andalusia and account for 93.3% of national production. This insurance scheme covered damage (in terms of quantity and quality) to the insured product caused by frost (H), hailstones (P) and wind (V) and exceptional damage caused by fire (F), torrential rain (LL) and flooding (I). Losses were valued in terms of a descending curve of guaranteed prices. For a case to be regarded as indemnifiable, the minimum value of the loss had to be greater than 5% for normal risks (H, P and V) and comprise an absolute deductible of 10%. Where the exceptional guarantees (F, LL and I) were concerned, the above percentages rose to 30% and 20%, respectively. Compared to previous offers, the principal novelty of this instrument was that it offered cover for exceptional risks for associations (POs) that provide compensation for losses in production caused by abnormal variations in unspecified natural agencies, which are beyond the control of the insuree and which lead to a reduction in the contribution of their members.

This type of insurance implicitly incorporated a third-generation insurance dimension (income insurance) because it envisioned compensation for any meteorological contingency that affects production and thus income. In this way, it incorporated losses in the value of actual production caused by any natural agent that had not been considered previously.

However, although the new policy was better adapted to the requirements of the sector than previous products, the contract data provided by ENESA show that participation was not as high as expected. In fact, the program attracted participants for only three individual seasons: 2002/2003, 2003/2004 and 2004/2005. No policies of this type were taken out in 2005/2006 or 2006/2007. Moreover, the number of contracts during these three seasons accounted for less than 20% of the total insured by both previous policies: 19.8% of production (12,226,280 kg of a total of 61,937,022 kg) and 18.6% of the capital insured (EUR8,341,0790.40 out of a total of EUR44,837,293.04).

The following were among the reasons behind the low penetration:

Covering market risks through a collective policy entailed management difficulties. Moreover, the risk profiles of the members may have been different, in that some of them may have been affected by risks associated with hurricanes and the destruction of their macrotunnels, whereas others may have suffered the effects of persistent rain.

Differentiation on the basis of quality. Insurance policies did not distinguish between the various qualities of fruit that entered the warehouses. In practice, this meant that equal value was put on the strawberries intended for the export market (the most valuable) and those fated for industrial processing. This aspect distorted the operation of the instrument because climatic effects may have induced a reorientation from fresh to industrial fruit, which effectively implies a drop in income that did not lead to compensation.

Botrytis cinerea. Post-harvest botrytis was the result of persistent rainfall or high environmental humidity levels. At the time of harvesting, the infected strawberries appear healthy, but a grey mould appears in the course of three or four days. This is a risk that is not adequately covered by existing insurance products.

High rates of deductibles. For risks per plot, the deductible rate was 30%, compared to 10% for extraordinary risk coverage.

Compensation for production losses among members. Because production was calculated at the collective level, compensation for loss of production was awarded to individual members after the excess production of other members had been taken into account. This could mean that, even though some members may have suffered losses, none of them received compensation.

Compensation with the indemnification awarded per plot. The fact that gross indemnification has to deduct the losses caused by the damage to plots leads to an undervaluation of the cover. The fact that this deductible is very high (30%) limits the ability to be awarded compensation and affects the possibility of obtaining indemnification.

Given that risks of plot losses are generally lower than market risks and that estimates for coverage of exceptional risks are made at the collective level, some members would inevitably find themselves compensating others. A member who has only suffered losses from cover may thus find himself affected by the assignation of plot risks (although he has not suffered any such losses) and will not receive compensation for the damage actually sustained.

Source: Aguado-Manzanares & Garrido (2008)

Based on the new CMO for F&V (Council Regulation 1234/2007 and Commission Regulation 1580/2007), free distribution is to be limited to 5% of the total production and will be financed 100% (compared to 50 or 60% for other withdrawals) by the Community on the basis of flat rates that are currently under revision. This includes sorting, packing and transport costs.

Another crisis management option is green harvesting. Resorting to green harvesting is a risky decision that requires careful risk assessments. Some conditioning and harvesting costs are avoided, but regrets may occur if prices turn out to be high. In addition, coordination within the PO is necessary to avoid potential free-riding effects.

Better coordination and increased concentration have been identified as potential pitfalls in pursuing risk-prevention mechanisms. Joint actions and programmes of POs face the problem of dispersion (there are too many, in Spain about 630). Subsidies become too atomised, losing effectiveness. On the other hand, market imbalances in one country spread to other countries, requiring Community action that provides a common response but is extremely difficult to coordinate.

2.1.4. Inter-Professional Organisations

As defined by EU legislation[13], an inter-professional organisation (IPO) is made up of representatives of economic activities linked to the production of, trade in, and/or processing of products in a number of sectors. The main characteristic of an IPO is its vertical chain of production. It is thus different from producer organisations (PO), which require that horizontal actions (such as concentration of supply) be coordinated between producers.

The general objective of IPOs is to develop activities in the interest of all the agents of a food supply chain. For example, consider the following: (i) improving market transparency and information access; (ii) drawing up standard contractual forms that are compatible with EU rules; (iii) establishing marketing rules; (iv) carrying out promotion actions; (v) promoting environmentally sound practices and promoting product quality labels; and (vi) carrying out the research necessary to direct production towards products more suited to market demands.

IPOs are recognised by EU legislation. Thus, an IPO is defined in Article 123 of the Single CMO Regulation as an organisation made up of representatives of economic activities linked to the production of, trade in, and/or processing of products in a number of sectors. Regarding IPOs, there is currently a Community framework for 5 sectors: fruit and vegetables, tobacco, wine, olives/olive oil and cotton. According to EU law, Member States may recognise IPOs in other sectors on the basis of national law, provided such IPOs respect EU law (Article 124(1) of the Single CMO Regulation). It is mainly in France (law, 1975 July 10), Italy (law, 1988 March 16) and Spain (law, 1994 December 30) that IPOs have been established for several other sectors. In other countries (e.g., Belgium), though there is no specific law, some organisations exist that resemble IPOs.

In France, the sectors for which IPOs exist are Aquaculture, Fruit and vegetables, potatoes, flowers, crop production, seed production, Milk and cheese, Meat and meat products and wine, spirits and other beverages[14]. In Spain, 27 IPOs are legally recognised with diverse sectors that include fruit and vegetables, citrus, various meat products, milk, egg and fodder among others[15]. In Italy, IPOs cover at least crop production, fruit and vegetables and milk production.

[13] Article 123 of the Single CMO Regulation.
[14] More detailed information can be found at: http://agriculture.gouv.fr/interprofessions.
[15] More detailed information can be found at: http://www.mapa.es/es/alimentacion/pags/interprofesionales/organizaciones/ointagro.htm.

Although IPO activities should be defined in accordance with the specificities of each given sector, IPOs may concern every agricultural product, and the examples from France, Italy and Spain show that there is no reason to restrict IPOs to specific products.

One classical role of the inter-branch is to provide market analysis to their participants to help them anticipate, as much as possible, the evolution of the markets, to adapt their supply to the demand (particularly in terms of quality), and to know the strategies of foreign competitors.

However, a more controversial point pertains to full price transparency. It appears that detailed information on prices and quantities may facilitate tacit collusion between firms that can then exert more market power. Sustaining tacit collusion requires precise information regarding the actions of the different partners (see Belleflamme and Peitz, 2010, for a simple explanation of mechanisms).

Box 5: Information and collusion

Sharing information could have pro-competitive effects but might also increase the sustainability of collusion between competitors. Das Nair and Mncube (2009) report a case of milk procurement in South Africa. The case pertains to the exchange of detailed information between six dairy firms (e.g., periodic reports on the comparison of firms' prices that provided specific pricing data such as factors used in the price-determining formulas). Based on the idea that the removal of uncertainty about rivals' actions can limit competitive rivalry, the competition authority concluded that the firms had engaged in concerted practices that directly or indirectly fixed procurement prices of raw milk. The exchange of input price information enabled processors to pay lower prices to their producers. In other words, the information exchange allowed processors to act as if they had a monopoly on buying raw milk.

The IPO can also develop collective advertising as well as R&D activities. The development of R&D actions should be encouraged as a way to increase demand in the long run by developing products that are better designed or by reducing costs.

Subject to approval by public authorities, IPO agreements and/or financing collective actions through 'taxes' may become compulsory to any members of any profession within the MS (this refers to the so-called 'extension of rules principle' as well as the 'financial contribution of non-members principle'). The extension of rules shall be the responsibility of the EU Commission, which has two months to determine whether or not to accept a particular extension of the rules. Compatibility with competition policy is a key requirement for obtaining approval of a rule(s) extension.

The IPOs can be useful in designing contracts, particularly with regard to solving problems related to delays. However, in the absence of any specific derogation, the regulatory role of IPOs is subject to the limits imposed by general competition rules (Art 101 TFUE). In particular, an agreement with a horizontal and vertical dimension that brings together operators at various steps of the supply chain, that has an effect on Community trade and that leads to price fixing is regarded as a hardcore restriction to competition (COM, 2009).

Other IPO concerns are related to joint decisions establishing the existence of serious market disturbances and designing joint remedial actions and temporary clauses to manage the crisis (crisis is frequently defined by a period with very low prices for upstream

producers). Frequently, IPOs might want to i) regulate the supply with regard to quantity, ii) regulate the supply with regard to quality, and/or iii) set minimum prices for upstream producers.

These clauses might have anti-competitive impacts and should be authorised by competition authorities. The possibility of regulating quantities and quality in response to crises (or, more generally, of derogating from usual commercial practices) exists, at least in some countries (e.g., France). For example, during crisis periods in France, there have been some attempts to set a minimum for the producer price (or, more precisely, to set a minimum ratio between the producer price and the consumer price). However, this practice (applied to fruit or vegetables) has yet to be proven efficient, as it remains very difficult to put in place and takes too much time to be implemented.

The first step is to define what constitutes a 'crisis'. Then, the proposed mechanisms must be determined, taking care not to be discriminatory. For example, clauses on quality (a temporary label indicating 'superior organoleptic quality'), as well as a clause on price (for the 'superior organoleptic quality'), are not compatible with competition rules, as they concern only national products and not the whole supply, which includes imports.

IPOs might develop actions for better defining and managing the quality of their products. Product differentiation is recognised as a means to better fitting production to demand. It is also a way to discriminate among consumers or, in other words, a way to better extract the willingness of consumers to pay for a particular product. Thus, each IPO is interested in developing collective actions to increase the demand for its products.

Quantity management is much less frequent and, in general, is forbidden for competition policy reasons. However, in the specific case of wine, Member States have the capability to define marketing rules, including supply regulation to implement IPO decisions. Thus, IPOs in the wine sector can create marketing rules to regulate supply, including creating a stock of wine with the objective of rendering unavailable an excessive proportion of the vintage that would otherwise be available[16]. This option is used in France with the goal of stabilising markets and avoiding price increases resulting from large production. Although this policy could be a tool used by producers to establish some degree of price stabilisation, it is important to note that the policy is strictly defined to avoid harming competition.

[16] *Council Regulation (EC) No 479/2008 art 67.*

2.2. Instruments of risk and crisis management

KEY FINDINGS

- Public aid given through income-based tools, including income insurance, is constrained by the limitations set by Paragraph 7 in Annex 2 of the WTO Agreement on Agriculture. Thus, the payments cannot be based on crop revenue losses, which would be much simpler, but must be based on the whole farm's gross income, which is complex to measure for highly diversified farms.

Ex-ante (proactive) measures

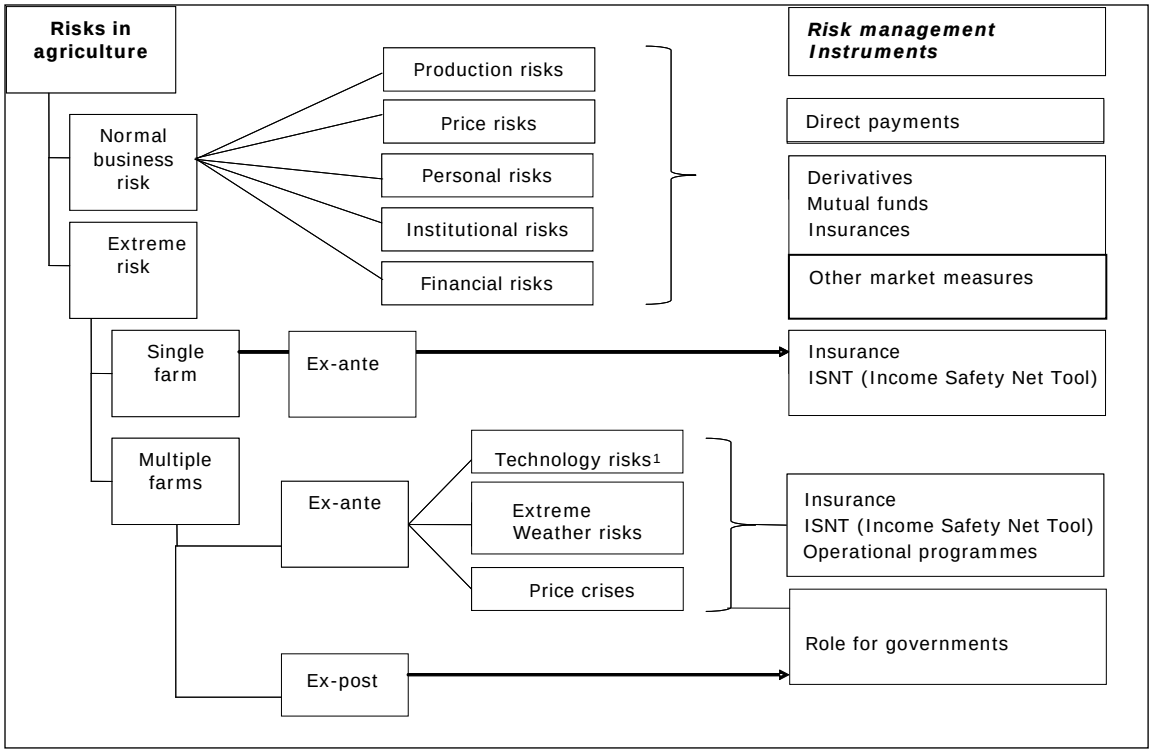
- Market-based mechanisms, such as derivative contracts, private insurance and mutual funds, could be helpful to encourage risk sharing at an affordable cost.
- The development of these markets is slowed by the lack of training, of adequate institutional and legal environments, and very often, of relevant data.
- Three government actions may promote the use of derivative contracts: (i) farmers' training, (ii) the creation of the institutional and legal environments needed for the private markets to operate smoothly, and (iii) the provision of timely and reliable information.
- Mutual risk-sharing agreements present some advantages over insurance, but their scope is limited to non-systemic risks.
- Income insurance could be an efficient tool, but it faces a number of technical challenges and, due to the high cost of reinsurance, can only be offered with public support.
- Income Safety Net programmes do not currently exist in the EU, but they have some potential to be useful provided that some technical/political issues are solved

Ex-post (reactive) measures

- Ad-hoc aid is limited to production risks.
- The establishment of a Budget Reserve in the MFF could enable the use of unallocated margins or the transfer of unused margins from one year to another if the reserve were activated in response to a serious crisis. Alternatively, it could include a multi-year agricultural envelope that could be activated in case of a serious crisis.

Two situations must be differentiated when considering risk and crisis management instruments. On one hand, market instability is known, and measures can be taken to deal with it. On the other hand, unexpected market crises are difficult to predict and can have serious impacts on farms' revenue. Figure 8 provides a schematic description of risk types. Normal business risk is differentiated from crisis risk because each requires different instruments.

Figure 8. Risk management



[1]Includes food safety and liability issues, livestock epidemics and environmental risks.

Over the centuries, farmers have developed a broad range of instruments to deal with the uncertainty related to the typical exposure of agricultural production to natural conditions. One possible classification distinguishes risk-mitigation from risk-transferring and risk-coping activities.

Risk **mitigation** refers to ex-ante actions that significantly alter either the probability of an adverse event or the associated damage. Ex-ante **risk transfer** activities reduce the event's negative economic consequences by transferring part or all of the risk to a third party who is willing to take it in exchange for a premium. **Risk-coping** activities, lastly, involve actions undertaken after the event has occurred to mitigate its consequences by resorting to one's own resources.

When an event is unlikely but would have severe consequences, it may prove to be more efficient financially not to address the event directly, as with risk mitigation activities. It is better to reduce the burden of the event's consequences by transferring part of it to other agents through various forms of contractual agreements. Some examples of this include sharecropping, forward sales agreements, futures and options, and insurance.

2.2.1. Ex-ante measures: Derivatives contracts

Some mechanisms for price risk transfer involve financial and other contractual relationships that can be considered as variants of the activity of hedging. For an economic agent, hedging means engaging in a financial arrangement that has a payoff structure that is correlated with the expected returns of the main economic activity. Depending on the type of correlation, the hedger will take either a "short" or a "long" position so that the returns from the hedging activity are negatively correlated with those of the main activity. The traditional **hedging** mechanism for commodity prices has been contracting **with**

future contracts markets. A producer interested in locking in a certain price takes a short position in the futures market; that is, he enters into a contractual obligation with the commodity exchange to deliver, at a certain future date, a certain quantity of the commodity at a specified price. The advantage of hedging through futures as opposed to forward contracts or price contracts (bilateral commercialisation contracts fixing the price in advance) lies in reduced search and other transaction costs. The seller operates on a commodity exchange and does not need to associate with the holder of the opposite position. The contract does not need to end with the actual delivery of the commodity; rather, the owner of a short position can take on an equivalent opposite position before maturity with only a cash transaction, and the two positions will cancel. In addition to futures, modern derivative instruments such as options and swaps have greatly broadened the scope of hedging activities.

With innovations in the financial markets, new ways to transfer risk can be devised through the design of appropriate contingent-claim financial contracts. Transactions are made contingent on the occurrence of a particular event. Examples include **options on futures contracts** to insure against price risk and **options on weather indexes** to insure against weather related damages. For particularly serious damages, the use of financial markets might allow part of the associated economic burden to be transferred to the wider financial sector through the issuance of securities whose payoff is linked to the event.[17] All forms of risk transfer that involve a financial contractual agreement could be described as trades of Event Linked Securities (ELS). The taxonomy of ELS is broad, including instruments that vary with the timing of the commitment and with the actual cash exchange and the characteristics of the "trigger", i.e., the condition that determines when a payment occurs.[18]

One common problem of all indexed tools is the existence of basis risk because each individual's losses are not perfectly correlated with the index. Therefore, some producers may not be compensated, even when suffering a loss, while others may be compensated without actually being damaged. The less an individual return is correlated with the index, the higher the basis risk is. However, for producers trading through cooperatives or producers' organisations, the individual market risk can be spread through this form of trading, while the aggregate risk is more similar to that in the index.

Other problems of these markets are the lack of transparency and excessive financial speculation. Sometimes, derivative markets have developed outside of formally organised exchanges in the so-called **over-the-counter market**, where there may be high counterparty risk. Many of the deals made in this market are kept off of the balance sheet and are not accounted for correctly. To avoid a situation similar to the recent global financial crisis and the apparent failure of derivative markets that has contributed to it, stronger monitoring mechanisms are needed so that the financial and commodity markets are more transparent and competitive.

The recent Communication of the Commission, "Tackling the challenges in commodity markets and on raw materials"[19], delves into these questions, highlighting links between prices of commodity derivatives and spot markets and between the efficiency of spot markets and derivative markets. It points out that although the positions on derivative

[17] Securitisation of large losses was first achieved for earthquakes and other catastrophes through the issuance of so-called CAT bonds.
[18] See also Cafiero (2008) for an extended discussion of the use of ELS for risk management in agriculture.
[19] Communication COM (211)25 final. Brussels 2.2.11

markets and spot markets are strongly correlated, it is difficult to fully assess the impact of movements in the derivative markets on the volatility of the spot prices.

Some proposals focus on discipline and transparency on derivative markets or on improvements in information and coordination. The establishment of stricter rules in derivative markets is one option considered. The possibility of setting limits on the positions that an institutional investor may hold in derivatives to eliminate or prevent excessive speculation and market manipulation is being considered by the US Commodity Futures Trading Commission and has also been proposed by the G-20 under French presidency. However, it is not clear whether changes in prices in futures markets would lead to changes in spot prices. A more feasible proposal by the EU calls for increasing the transparency in the derivative markets because most operations are opaque. Many authors point out that the commodities and financial markets have not been sufficiently transparent and competitive, leading to failures in the futures and derivative markets. Measures to improve transparency include regulation of agents that can operate in these markets.

Moreover, speculation itself is good for derivatives markets and is especially needed in the poorly developed European commodities exchanges. The role of speculators[20] is crucial to the smooth operation of a market for derivative instruments. In fact, hedging always requires a counterparty to assume the “opposite” side of a hedged position. Sometimes the opposite side is taken by other hedgers who have a corresponding opposite stake (for example, the buyer of a commodity has exactly the opposite stake with respect to the price compared to the producer of the same commodity), but this need not always be the case. The opposite position on a given hedge can be taken by speculators who may enter into the contract for speculative purposes. Speculators therefore contribute to market liquidity, especially if there are few hedgers on both sides of the risk. In addition, given that speculators’ activities may be justified on the grounds that they might be better informed about the direction of price movement for the given commodity, the presence of speculators serves an additional purpose of improving the quality of information contained in quoted prices.

Although current commodity futures markets in Europe are relatively thin compared to those in the US, further price liberalisation and specialisation of farms may change this. These financial instruments will only be viable where an objective source of information exists that is not susceptible to manipulation by the interested parties, and here resides a fundamental role for public policy. Two types of information, if made publicly available, would favour the establishment of new risk-sharing mechanisms. First, data on prices and quantity traded on the major markets might constitute a basis for creating derivatives to be used for hedging market risks. Second, weather information could form the basis for the design of effective derivatives. Governments should thus promote the legal and institutional settings needed for efficient operation of these markets, including the timely production, certification and diffusion of relevant information. The development of futures markets would also have an important effect on the provision of valuable price information, facilitating the development of other risk management tools, specifically revenue and income insurance or stabilisation schemes. Ad-hoc working groups could contribute to develop these markets in Europe, establishing the products with higher potential and demand, and the conditions supporting their growth.

[20] A successful market is usually one where two types of operators act: hedgers and speculators. Hedgers have direct exposure to the underlying risk (for example, a hedger might be the producer or end user of the randomly priced commodity), whereas speculators have no direct exposure to the underlying risk; they are simply betting on the direction of price movement.

Learning to use derivative markets requires a substantial investment of time. Several authors have stressed the need for targeted education and training programmes (e.g., HLG, 2010 and Meuwissen et al., 2008) to further stimulate the use of futures markets. The development of trading requirements (for example, quality grading and standard definitions of commodities) is likely to enhance the development of these markets.

Thus, public action in three fields is essential: first, in the training of farmers to know and use these instruments; second, in the creation and maintenance of the institutional and legal environment needed for the private markets to operate smoothly and to prevent the establishment of rent positions, and third, in the provision of timely and reliable information.

New teaching technologies offer opportunities to develop these objectives at very low cost. The development of e-learning courses, the links to reliable sources of market information or the access to all available instruments should help farmers to better understand their usage. The EU could support initiatives aiming to offer on-line materials written in different languages to farmers all this new possibilities, and the creation of specific websites[21].

2.2.2. Ex-ante measures: Risk management toolkit

Although farmers should be responsible for pursuing risk management strategies, it should also be acknowledged that private insurance and hedging instruments remain poorly developed in Europe, partly because of historical CAP intervention measures. Governments could promote some instruments to improve risk management. The Commission Communication on “The CAP towards 2020” proposes the introduction of an optional risk management toolkit in the Second Pillar (COM (2010) 672 final).

Funding the toolkit in the second pillar, as opposed to fund it with the first one, has a number of advantages and disadvantages:

- First pillar does not have the territorial character that the second one has. Therefore more equivalent toolkits will be possibly developed to all EU farmers. Thus, first-pillar funding would enable a broader based for application of similar instruments, offering in the future larger opportunities to pool and spread risks across Member States.
- Second pillar includes multi-annual programmes, which are co-funded by MSs and are developed to meet the needs of regions and even smaller areas. These represent strengths for instruments candidate to be included in the toolkit. By contrast, heterogeneity is a disadvantage for the Commission to assess the income stabilisation support granted by the instruments offered in each region, and to move towards greater pooling and risk-spread potential within the EU.

To the extent that each approach— first-, or second-pillar based toolkits--, has its own advantages and disadvantages, it is proposed that each Member State should be given the option to use one or another.

The new toolkit may include the instruments described below.

[21] RiskNavigator, developed by Prof. Dana L. Hoag and colleagues (Colorado State University) is an example of a suite of teaching materials, blogs, videos and discussions developed for US farmers wishing to learn more about risk management (http://risknavigatorsrm.com).

2.2.2.1. Mutual risk-sharing arrangements (mutual funds)

Mutual risk-sharing arrangements could be integrated into the toolkit. If the necessary legal and institutional conditions exist, a group of producers can join in the administration of a mutual agricultural insurance fund. Such arrangements are more efficient than commercially provided insurance to the extent that peer monitoring and long-term commitment by the participants could effectively reduce the cost of moral hazard control. In the case of market risks, the pooling effect within one year would not apply. A fund could be created where reserves can be accumulated for one year at low prices. However, coverage is limited when several years of systemic losses do not permit the fund to recover.

Experiences with existing mutual arrangements for risk sharing in agriculture are mixed, although the limited extent of their diffusion is more likely due to a lack of proper legal and institutional settings than to some inherent limits (see Bielza et al. 2007a). One foreseeable advantage of mutual arrangements in the form of producers' cooperatives or regional farmers' organisations is that such organisations could also be responsible for "bundling" and transferring the systemic component of risk exposure to the broader financial community through use of the modern financial instruments discussed above. In the absence of systemic risk-transferring mechanisms, mutual funds or stabilisation funds are not adequate instruments to deal in full with severe market crises or prolonged periods of negative margins, whether they originate from sanitary crises, market downturns or natural catastrophes. However, they can be useful to help farmers recover and rebuild their financial standing after a crisis.

2.2.2.2. Production (crop and livestock) insurance

Production insurance has developed as a form of contract in which one party transfers a well-identified economic risk to another party by paying a price (the "premium"). Traditionally, effective **insurance for crop production** has existed only for a very limited set of risks (namely hail and, to a much lesser extent, fire). Although this single-risk insurance is well developed in Europe, multiple-peril or all-risk crop insurance is limited to a few countries. Private companies insure against only hail and fire, but as the government increases its involvement in insurance, more comprehensive coverage can be provided. The level and extent of coverage and subsidisation vary widely from country to country, with programmes down to the regional level in some European countries. Meuwissen et al. (2008) surveyed agricultural producers in five EU countries (Germany, Hungary, Poland, the Netherlands and Spain) about their risk management perceptions and practices. As a group, the farmers surveyed manage risk predominantly by using property and crop insurance, holding financial reserves and avoiding credit, followed by vertical integration and marketing contracts. In Germany and Spain, crop insurance is used more than in other countries (by 60 to 70% of farmers). This difference is partly explained by a high level of public subsidies in Spain (49%), whereas in Germany it may reflect basic coverage by single-risk insurance as well as an overall propensity to purchase insurance.

For several countries, in particular Belgium, Germany, the Netherlands, UK and Ireland, hail insurance or single-risk insurance is the main insurance product available. The lack of public support for insurance in these countries probably explains why broader coverage is not usually provided. In Bulgaria, the Czech Republic, Hungary, Poland, Portugal, Slovakia, Slovenia and Sweden, single and combined risk insurance is available. Yield insurance guaranteeing the main risks affecting production exists in Spain, Italy, Austria and now France (Bielza et al. 2008).

The insurance services provided to farmers could benefit from common guidelines for EU agri-insurance markets and services that would create more harmonised insurance systems throughout Europe. A harmonised system would eventually lead to more integration of the agricultural insurance market, allowing for more risk pooling and dispersion. Besides, a set of common guidelines could encourage the development of insurance in countries where demand could exist (especially new Member States).

Public involvement in insurance is generally justified on several grounds. First, developed insurance systems demand amounts of data that no private company would be willing to collect, maintain and analyse. Second, agricultural insurance needs premium subsidies to take off and expand the events that farmers can insure against. Garrido and Zilberman (2007) showed that premium subsidies are perhaps the most influential factor in tilting the balance towards the decision to purchase an insurance policy. However, they also found that farmers who have experienced indemnified crop failures in the past require smaller premium subsidies to purchase a policy. Lastly, some EU countries, including France and Spain, require that ad-hoc payments be made only for hazards not covered by insurance policies. Eligibility for payments is thus conditioned on purchasing an insurance policy. This policy adds a significant need for clarification of the procedures that the loss-adjusters who work for the insurance system can use for identifying individual recipients of ad-hoc payments and to evaluate claims. Another important benefit of the strong reliance on insurance versus ad-hoc payments is the rapidity with which claims are processed, screened, adjusted and paid (within 60 days by law).

2.2.2.3. Income and revenue insurance

Revenue insurance protects against both production and market risks by triggering a payment when the product of price and production is below the guaranteed revenue level. Income insurance takes into account whole-farm income, thus guaranteeing the margin between revenue and production costs.

Although private crop insurance is highly developed around the world, income and revenue insurance are much more restricted. In the United States, where a number of revenue programmes are quite successful, insurance has been backed by substantial public support in forms of subsidised premiums and publicly provided reinsurance. In 1998, Dalgety Co. attempted to completely privatise revenue index insurance in the UK. Take-up was minimal, and the product offer was cancelled in the following season (Bielza et al. 2008).

The income risk in EU agricultural areas has been evaluated in several studies. As a general rule, risk and insurance coverage are related, and public involvement in the insurance market is higher in countries where risk coverage is high. Whole-farm income insurance and area revenue insurance do not exist in Europe.

There are some difficulties with developing income and revenue insurance. High costs are involved because of the systemic nature of market risks. The presence of systemic risk undermines the basic principle that makes insurance an effective risk management tool: the possibility of pooling risks that are uncorrelated so that the exposure of the entire pool is much lower than that of any individual component. When highly correlated risks are pooled together, an insurance fund needs to consider the possibility that, when a widespread loss occurs, the premiums collected would not be sufficient to cover the indemnity cost. Thus, the need arises to keep a sufficiently large liquid reserve to honour the commitment to pay indemnities.

Problems associated with the systemic nature of some risks and with information asymmetries, which are common in fully private all-risk crop insurance, compound with revenue or income insurance. Crop insurance against losses other than hail or fire exist in some places only because governments are heavily involved in either directly administering the programmes (such as in Greece, Canada or India) or indirectly sustaining the programmes through premium subsidies (such as in Spain, Italy or the United States). Even in countries with highly subsidised premia, the level of participation by farmers is far from universal. The reason for this is not clear but may involve the low farm risk due to diversification strategies, the security provided by direct payments, and the expectations of ad-hoc aid in case of a generalised climatic calamity.

2.2.2.4. Income stabilization tool and Income Safety Net Tools

Income stabilization tools could be an alternative option to income insurance, if the objective is to increase farmers' income stability (for example, similar to the program Agri-Stability from Canada[22]). Similarly to income insurance, this instrument aims at guaranteeing a minimum of income. In contrast with income insurance, in this tool the Government (national or EU) acts as insurer and pays most of the compensation. The budgetary needs would be equal to the expected indemnities of the farm[23].

Given the existence of other mechanisms to manage “normal” risks, this income tool should not provide general income support to all farmers but should be targeted at farmers who experience severe income losses but have made use of all available instruments to protect themselves. Thus, this instrument can be better described as an income safety net tool (ISNT).

ISNT can be designed to provide coverage only for risks that are not covered by other existing instruments, such as insurance and mutual funds. As in the Canadian scheme, farmers may pay a fee to participate so that there is co-responsibility in risk management. Farmers could be required to buy some insurance coverage or to sign up for any available risk management tool to be eligible for further assistance with non-insurable risks from ISNT.

ISNT is likely to incur high costs, especially in years when systemic (market) risks or generalised calamities take place. Of course, ISNT should work like a fund, accumulating depth from good years to compensate for bad years. However, because the fund may not hold enough reserves to cover its losses, it would probably need reinsurance in the international reinsurance markets. If ISNT were provided at the EU level rather than by Member States (MSs), more risks would be pooled, making the scheme more efficient and cheaper. Finally, as a safety net at the EU level, which may be co-funded, it may have redistributive effects among MSs; i.e., some countries may benefit relatively more than others.

[22] http://www4.agr.gc.ca/AAFC-AAC/display-afficher.do?id=1291990433266&lang=eng

[23] The EU Commission made a calculation for the application of income stabilization tool for entire EU of amount in the order of 6 bio EUR (http://ec.agriculture/analysis/perspec/app-briefs/index_en.htm).

To deal with these serious concerns, an ISNT should be designed with the following premises in mind:

- It should be optional for MSs to develop it.
- As an instrument of the risk management toolkit, MSs should be given the option to finance it from the first or second pillars, and by MSs.
- Farmers should be required to pay to benefit from it.
- Because it complements the risk-reducing potential of available instruments, the cost of ISNT (per EUR of farm's expected income) should be lower for farmers who purchase insurance, are members of mutual farms or can provide evidence of using other instruments from the toolkit.
- The European Commission should establish criterions that can be used to categorise all the specific instruments that can be considered as valid for INST. While this entails complex definitions, they are needed to ensure that all EU farmers wishing to have a safety net are given equivalent levels of income protection.
- Farmers in Member States opting to develop and offer them an INST should not be eligible for any ad-hoc payment in times of crises or catastrophes. Member States opting not to develop and offer and INST could grant their farmers the kind of support they wish, using national funds according State Aids rules.
- The cost of ISNT for each farmer should be based on sound risk-assessment methods.
- ISNT should comply with all WTO 'green box' requirements (see next section).
- ISNT should be contracted and commercialised by private firms (insurers) in accordance with clearly established EU rules. Firms should be selected through EU standard tendering procedures.

Figure 9. Strengths and weaknesses of income safety net tool (ISNT)

Instrument	Strengths	Weaknesses
General Income Safety Net Tool (ISNT)	• Supports farms' resilience and survival • Cost-effectiveness (addresses farm income directly) • Widespread coverage	• High administration complexity and design • Needs considerable funding
Member State ISNT	• Political ease	• Less risk-pooling potential • More expensive
EU ISNT	• Risk-pooling • Cheaper re-insurance • More cost effective	• Politically complex • Potential redistribution effects among MSs • Insurable risks vary across MSs

The design of this instrument and of income insurance presents some administrative and technical problems. The administration of the system should be able to cope with large simultaneous losses. Delay in payments has usually been shown to be non-negligible in

government-run programmes and disaster payments, a weakness that the ISNT should avoid. Technical problems are mainly derived from asymmetry of information and from difficulties of obtaining reliable data adjusted to the real situations of the farms (data on input amounts and input and output prices). Because these problems are closely related to the WTO green-box criteria for farm income, they are discussed in the following section.

2.2.2.5. Income tools and WTO

Public payments for both income insurance subsidies and ISNT compensations can be eligible to be declared as "Green Box" under certain assumptions.

Public aid given through income-based tools, including income insurance, is constrained by the limitations set in Paragraph 7 in Annex 2 of the WTO Agreement on Agriculture[24]. This paragraph already limits the aid to severe events given that the income loss must be above the 30% of the previous years' average income and that the income compensation is limited to 70% of the loss. However, it does not refer to any systemic event or to a public declaration of catastrophe, as paragraph 8 does in referring to production losses.

Compliance with paragraph 7 is difficult. The main difficulty lies in establishing the real gross farm income, given that "*the amount of any such payments shall relate solely to income; it shall not relate to the type or volume of production (including livestock units) undertaken by the producer; or to the prices, domestic or international, applying to such production; or to the factors of production employed*." Thus, the payments cannot be based on revenues from a certain crop, which would be much simpler, but on the whole farm's gross income, the measurement of which is complex for highly diversified farms.

There is a second, and probably greater, difficulty: if the programme was based on the sum of farm revenues, the normal approach would be to take into account the actual production and estimate the price from an area price or price index, but with this method the real farm gross income cannot be established with certainty. As a result of this constraint, the programme should be based on reliable income accounting, such as from tax declarations. Given this important constraint, at the moment, only Canada, which has an adequate fiscal system, has succeeded in declaring payments to income stabilisation tools under green box (see box 6 for a description of the Canadian programmes). Success does not seem possible with less developed tax systems.

[24] The agreement states: "7. Government financial participation in income insurance and income safety-net programmes
(a) Eligibility for such payments shall be determined by an income loss, taking into account only income derived from agriculture, which exceeds 30 per cent of average gross income or the equivalent in net income terms (excluding any payments from the same or similar schemes) in the preceding three-year period or a three-year average based on the preceding five-year period, excluding the highest and the lowest entry. Any producer meeting this condition shall be eligible to receive the payments.
(b) The amount of such payments shall compensate for less than 70 per cent of the producer's income loss in the year the producer becomes eligible to receive this assistance.
(c) The amount of any such payments shall relate solely to income; it shall not relate to the type or volume of production (including livestock units) undertaken by the producer; or to the prices, domestic or international, applying to such production; or to the factors of production employed.
(d) Where a producer receives in the same year payments under this paragraph and under paragraph 8 (relief from natural disasters), the total of such payments shall be less than 100 per cent of the producer's total loss.

Box 6. Canadian disaster assistance programmes

Since 1998, Canadian disaster assistance programmes have been designed to comply with "Paragraph 7" of WTO Agreements. AIDA-CFIP and, later, CAIS were designed to be "green box". Their successor is Agri-Stability, which works quite similarly to CAIS. This programme establishes a reference gross income (farm gross margin) for each farm based on an 'Olympic' average, that is, the moving average of the five previous years minus the minimum and maximum. When losses are below 30% of this reference income, payments are made from the government in an amount corresponding to 50-60% of the loss, which is not considered green box. The rest comes from farmers' contributions to the scheme. When losses are greater than 30%, the government makes green box payments covering between 60% and 70% of the loss, depending on the "layer" of the loss. The rest comes partially from the farmers' contributions to the scheme and is partially assumed directly by the farmer.[25]

A possible alternative approach is estimating farm income from a combination of real production, price indexes, and estimated input amounts based on averages (for example, the Standard Gross Margins from FADN). The Agreement on agriculture could be changed in such a way that it refers to an "estimated" farm income, calculated according to transparent rules, to allow for the possibility of combining farm productions with price indexes. In the USA, there is an insurance scheme covering estimated gross margins, but it considers the amounts as fixed and takes into account only output price and input price variations (see box 7).

Box 7. Livestock gross margin (price) insurance (USA)

The closest example to income insurance could be "Livestock Gross Margin". However, it is not declared under green box because it is not really income insurance but price insurance: it does not take into account production, but only price risks.

Livestock Gross Margin, available since 2006 in the USA, provides coverage for the difference between the commodity and feeding costs. If the producer's expected gross margin is greater than the actual gross margin, an indemnity is due.

Coverage is determined using futures and options prices from the Chicago Mercantile Exchange Group. Prices are available for swine, cattle, and milk. Producers decide the number of head (cwt of milk) to insure and the length of the coverage period.

A last minor problem with paragraph 7 is the fact that losses need to be calculated with reference to the three previous years' average, or a three-year average based on the preceding five-year period, excluding the highest and the lowest entries. As Bielza et al. 2008 showed, this average can be very volatile and, to a certain extent, unfair. Thus, an insurance company would be reluctant to grant insurance based on this moving average. A much more suitable comparison would be a medium- or long-term trend. However, adjusting a fair, objective trend is often difficult and requires statistical criteria. Thus, if it were possible to change paragraph 7, a point to be discussed would be the substitution of

[25] http://www.bdo.ca/library/publications/agriculture/documents/agristability-agriinvest-agriinsurance-and-agrirecovery.pdf
http://webcache.googleusercontent.com/search?q=cache:DQ3JcITCpjoJ:www4.agr.gc.ca/AAFC-AAC/display-afficher.do%3Fid%3D1201795725175%26lang%3Deng+farmers+contribution+to+Agri-Stability+fees&cd=3&hl=en&ct=clnk&source=www.google.com

the previous three-year average for a five- or six-year average or, ideally, for a trend (for example, a 10-year trend).

2.2.2.6. Role of the EU

Production insurance has been applied in a number of MSs under state aid rules. Community support for insurance schemes has been introduced only recently under Article 68 measures. The current legal framework only allows insurance (and post-ad hoc state aid) for production risks[26].

The Commission Communication on "The CAP towards 2020" proposes an optional risk management toolkit to address both production and income risks ranging from a new income stabilisation tool compatible with WTO green box to strengthened support to insurance instruments and mutual funds. This proposal could be included under the Rural Development Measures in second pillar.

Income insurance and income stabilisation tools can be justified within the toolkit of risk management policies as a safety net in an open trade setting. In fact, we propose to consider an ISNT – as described above - rather than an income stabilisation tool. An income stabilisation tool with high coverage is unnecessary with the existence of the Single Payment and a market safety net for the most important commodities, and ISNT covers losses from crises or very high losses (definitely above 30% of income, and possibly even higher) caused by non-insurable risks. Some countries could choose to develop income insurance in such a way that premium subsidies apply only for large losses, in a similar way to ISNT[27]. Of course, both premium subsidies to income insurance and payments from ISNT should comply with WTO green box criteria, as mentioned in the section above. We advise that ad-hoc aid should not be given in those cases where an ISNT or publicly supported income insurance has been created because this would completely crowd out participants in the tools.

Regarding the question of whether to implement income-based tools at the EU level or at the MS level, we have seen that some important advantages arise from implementing them at the EU level, such as the efficiency of risk pooling and lower reinsurance cost. However, this approach can present some difficulties both from a political point of view (for example, potential redistributive effects) and from a technical point of view (diversity of situations among MSs). Thus, in the short term national tools are likely more viable, although the viability of the EU-level approach should be studied. In fact, we propose that, should ISNT be developed with EU support at the national level, basic common functioning mechanisms should be included so that in the future the system can be scaled up to the EU level.

The toolkit could be included for co-financing under the second pillar of the CAP, but also under Article 68 of the first pillar. MSs could choose whether to use the funds from one or from the other. In any case, MSs should also be permitted to promote all of the tools in the toolkit using their own resources if they have the same characteristics as the tools eligible for co-financing.

In the same way as for derivative markets, private insurance and mutual funds could be further developed by the private sector if helped by public measures. Databases must be created to develop new instruments, such as weather index-based insurance or even

[26] See the point on state aid below.

[27] The development of both income insurance and ISNT in a country at the same time seems unrealistic given the effort needed and the fact that one tool would make the other useless.

conditional lines of credit[28]. Training farmers and farmers' associations in the functioning of new types of insurance (e.g., index insurance) could also prove helpful.

2.2.3. Ex-post measures: State aid

Risk and crisis management are already considered in the legal framework for state aid. Member States can intervene with emergency aid, with the role of the Commission being to ensure that they do not distort competition. The current guidelines for state aid in the agricultural sector allow for aid at the national level under the following circumstances:

(a) damage caused by natural disasters or exceptional occurrences;

(b) losses caused by adverse weather conditions;

(c) to combat animal and plant diseases.

Such aid must be approved by the Commission unless the state complies with *Commission Regulation (EC) No 1857/2006 of 15 December 2006 on the application of Articles 87 and 88 of the Treaty to State aid to small and medium-sized enterprises active in the production of agricultural products*.

Furthermore, there is a "de minimis" threshold for state aid below which the Commission need not be notified, which is fixed at EUR7,500 per farmer over a three-year period. Under the recent Temporary Crisis Framework, this ceiling has been temporarily augmented to EUR15,000 per farmer. This Framework for State Aid supports access to finance for enterprises facing increased difficulties in obtaining credit as a consequence of the financial crisis. Primary producers were originally excluded, but the Council approved a modification during the 2009 milk market crisis to allow for temporary state aid of EUR15,000 to farmers. This aid was afterwards offered to all sub-sectors of primary agricultural production. This framework is another "last resort" form of state aid, which should be limited in time and meet all conditions of the Temporary Crisis Framework. In particular, the scheme must be necessary, proportional and appropriate to remedy a serious disturbance.

2.2.4. Ex-post measures: EU budget reserve

Articles 44, 45, 47 and 48 of the single CMO enable the EU Commission to take exceptional measures in cases of markets affected by restrictions on trade resulting from the application of measures for combating the spread of diseases. Moreover, the disturbance clause (Articles 186 and 187) allows the Commission to take necessary measures if the other measures are insufficient in some sectors. However, implementation of this plan is difficult due to the lack of an appropriate budget.

The aim of having a budget reserve is to better cope with severe crises when the other instruments of market regulation have failed. Its purpose is to make available, within realistic limits, appropriations for expenditures not foreseen at the time the budget was prepared. The resolution of the European Parliament of 8 July 2010 on the future of the CAP post-2013, in its point 79, recommends setting up a special budget line reservation for

[28] A conditional line of credit is an agreement between an agent who anticipates the possible need for short-term financing to face a potential emergency situation and a bank or other lending institution. Lines of credit can be conditioned on the occurrence of short-term market crises (for more information, see Cafiero, 2008).

quickly dealing with serious market crises. This reserve would enable the Commission to take exceptional measures in accordance with the single CMO in cases of widespread crises in sectors with high implantation in the Community.

Current discussions on budget reform have highlighted the need to balance predictability and flexibility. As stated in the Communication from the Commission on the Budget Review[29], the Multiannual Financial Framework (MFF) has ensured strict budgetary discipline at the expense of limited flexibility. The budget execution rules have emerged as limiting constraints for coping with unexpected events such as those produced by the food crisis.

EU spending currently takes place within the limits of the MFF, distributed in five headings and annual budgets. For agricultural expenditure, binding annual ceilings are established under heading 2 of the financial framework, dedicated to "Preservation and management of natural resources", in two sub-ceilings: 2a) market regulation and direct payments and 2b) rural development. The financial discipline approved in the financial framework 2007/2013[30] hardened the conditions for agriculture, creating the possibility to reduce the direct payments in case agricultural expenditure (excluding rural development) surpasses the ceiling. It is unlikely that in the new financial framework, the CAP would increase its budget; the most that can be expected is that the current budget will be maintained so that the introduction of new instruments is considered within current ceilings, with the unused margins and increased flexibility in the expenditure.

The Commission proposed several mechanisms to increase flexibility in spending[31], which could be considered for inclusion in the budget reserve to overcome serious crises in agriculture:

1. Reallocation flexibility to transfer headings in a given year, within a specific limit.
2. Ability to transfer unused margins from one year to another, within specific limits.
3. Freedom to front- or back-load spending within a heading's multi-annual envelope to allow for countercyclical action and meaningful response to major crises
4. Increasing the size or widening the scope of the existing Flexibility Instrument and Emergency Aid Reserve, and possibly merging them.

Given the growing pressure to control agricultural expenditures through predetermined allocations, it may become more difficult to increase the flexibility of transfers among headings. As a result, the establishment of a budget reserve could be considered in two ways. The first is to allow the use of the unallocated margin under heading or the transfer of the unused margins from one year to another in case the reserve is activated due to serious crises. The second is to include a multi-year agricultural envelope that could be activated in case of a serious crisis.

The effectiveness of a budget reserve will be greater, adding some flexibility to the appropriation rules in the new MFF and including reserves to cover unforeseen situations.

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[29] The EU Budget Review. Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee of the Regions and the National Parliaments. COM (2010) 700 Final. Brussels, 19.10.2010

[30] Interinstitutional Agreement on the 2007/2013 financial framework (DO C 139, 14.06.2006)

[31] The EU Budget Review. Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee of the Regions and the National Parliaments. COM (2010) 700 Final. Brussels, 19.10.2010.

2.3. Market management instruments

KEY FINDINGS

Public and Private Storage

- There is a rationale for government intervention in stimulating building and disposing of reserves of key commodities.
- Private storage aid should be preferred to public storage, particularly when quality and storage costs are relevant issues.
- Storage policies may be costly and have very limited impact if domestic and international markets are highly interrelated, but they may have a broader scope if price formation is mainly domestic (e.g., meat or meat products) or to smooth intra-seasonal peaks (e.g., dairy products).

Border protection

- Some scope for intervention remains, particularly in market access.

Promotion

- Effects of promotion measures are more significant in the long term, contributing to the supply-demand balance.
- As a demand augmentation mechanism, promotion programmes may not suffice during a crisis or prolonged periods of declining prices.
- Effectiveness depends on the budget allocated and the matching effort of the producers' organisations.
- The promotion activities require cooperation among firms, creating opportunities for the introduction of new technologies, new forms of management and governance and new strategies.

World markets and price stabilization

- Storage is not adequate to fully prevent episodes of extreme high prices.
- The establishment of an internationally coordinated reserve presents many technical and political problems, so its feasibility is questionable.
- The notion of "virtual reserve" has many deficiencies as a stabilisation instrument, and it has no advantage over the EU, which can act to stabilise prices in a more effective way.
- The unilateral establishment by the EU of a reserve with stabilisation objectives could be considered, although its effectiveness would be reduced unless complemented by additional WTO-compatible trade measures.

- Information and market intelligence systems are crucial to avert food crises and ensure that food emergency situations can be faced at the cheapest and most effective means.
- World markets need reinforced regulations and better governance.

2.3.1. Public and Private Storage

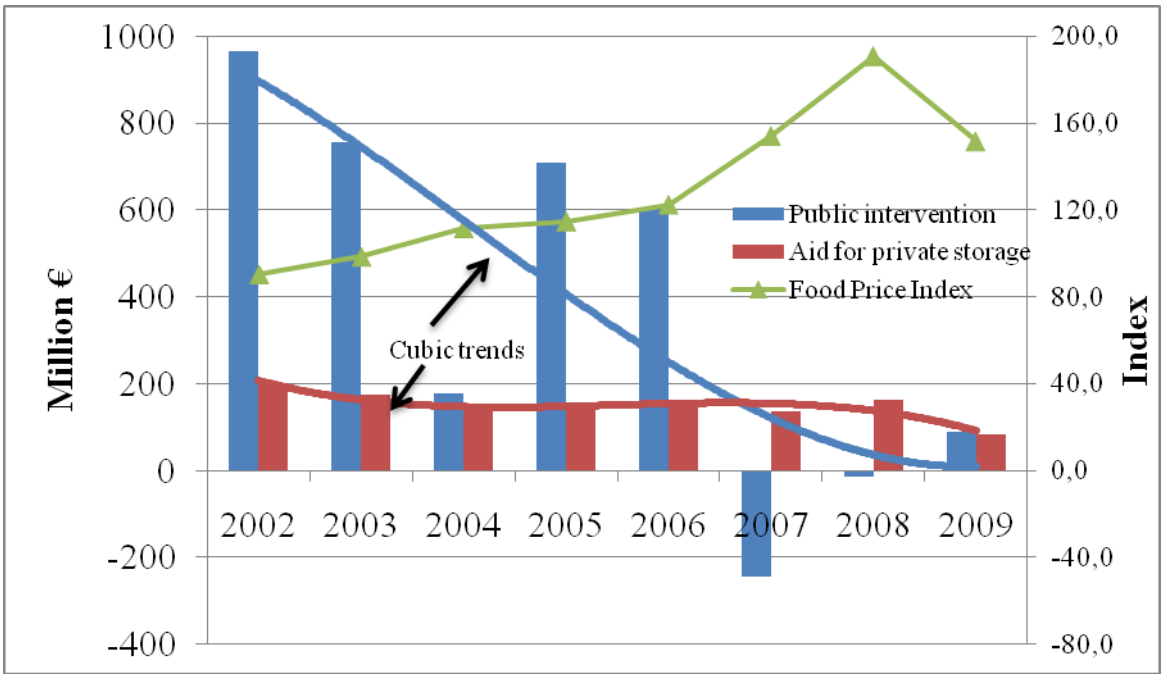
Public intervention mechanisms, either through public storage or through aid to private storage, have aimed to stabilise markets and enhance farmers' standard of living. Budgetary expenses now represent 0.4% of the budget of the EAGF, and storage is appropriate for storable commodities, like cereals, rice, olive oil and olives, meat and meat products, powdered milk and other milk products. Herein we discuss the potential of storage as a safety net for price-induced revenue losses when setting floor prices for the affected products.

The legal basis for public intervention and for the payment of aid for private storage is found in the Single CMO regulation 1234/2007. Currently, the products eligible for **public storage** are cereals (wheat[32]), beef and veal, skimmed milk powder and butter. However, the specific extent to which the storage-related measures are put to work differs substantially across specific product markets. There can be intra-seasonal limits on public intervention, trigger price levels that must be passed before storage aid is granted or quantitative limits on intervention stocks to differentiate between mandatory and voluntary intervention.

The eligible products for **private storage** aid in the EU are butter, olive oil, sugar, and fresh and chilled meat from pigs, sheep and goats. Aid for private storage plays a larger role for livestock products, in particular meats. These products have a substantially higher degree of quality differentiation in comparison to many crop products and are generally also more costly to store. Aid for private storage is generally only granted under specific market conditions, typically when prices drop below some threshold. In this case, the aid, if it has not been fixed in advance, will be set by means of a tendering procedure. In the livestock sector, pre-fixed rates dominate and are particularly used when the perceived market situation requires rapid intervention.
In terms of budgetary importance, public storage is much more important than private storage, although the share of intervention-related expenditure in the EU budget has dropped drastically. The trend in the relative importance of the two basic types of storage-related measures over the past years is also clearly seen in Figure 10.

[32] For other eligible cereals, including rice, intervention quantities for mandatory purchases are currently set at zero so that it is at the Commission's discretion whether to open tenders for public intervention.

Figure 10. Expenditures on storage-related measures (bars and left vertical axis) and FAO food price index (right vertical axis), 2002-2009



Source: Own compilation based on EU and FAO data.

Aid for private storage is found to be stable over time, whereas public intervention expenditures are declining rapidly. In 2007 and 2008, aid for private storage even outweighed public intervention. The FAO food price index, which is also depicted in Figure 10, suggests that public intervention reacts to international price developments. Much of the reduction in budget outlays for public intervention has been mitigated by favourable international prices for the EU's major export products. When international prices are high (low), outlays for public intervention tend to fall (increase). No clear correlation is found for the aid for private storage, especially in the milk sector. However, price fluctuations for meat products in the last decade are also partially addressed by changes in budgetary outlays for private storage aid.

The private storage aid scheme is generally perceived by market actors as a useful tool. It does not necessarily require a fixed lower threshold for market prices, but it can dampen rapid price movements without blurring the visibility of price signals. In this sense, this measure is less distortive in comparison to public intervention. On the other hand, it is also more difficult to judge its functioning empirically. Quantitative analyses tend to find no statistically significant impact on production but suggest a correlation between reduced price variability and the use of this measure (Agra CEAS Consulting 2005; Hoste 2008).

Using public intervention in storage is a rather complex decision for several reasons. First, volatility is not a fundamental per se (Samuelson 1972) but is caused by shifts in the fundamentals of the market (supply, demand, policies, or institutions). Thus, any change that would normally lead to adjustments in market equilibrium (via volatile prices and/or quantities), if prevented by storage interventions, leads to an inflated adjustment pressure elsewhere if commodity and storage markets are otherwise perfectly competitive. The possibilities for intertemporal smoothing will generally be fully exhausted by private elevators. Second, storage measures must be evaluated in a dynamic setting. Even with risk neutrality and rational expectations, the results of the analysis usually depend on the

model assumptions (Williams and Wright 1991), including assumptions about the shapes of demand and supply functions. This makes generalising selected results difficult, if not impossible. Third, the information requirements for forming expectations are often quite demanding; a public stock manager might face severe challenges in terms of access to market information. Fourth, public storage may distort or even crowd out private storage activities. Aggregate storage is the total of public and private stocks. The interdependence between these two types of storage, in combination with possible crowding out of private activities by governmental actions, will be decisive for the net market impact of aggregate storage. The issue is whether the public sector should hold reserve stocks above and beyond the willingness of the private sector to hold stocks.

Theory and practice suggest that at any one time, and given the total volume of stocks available, the market, in the absence of any public intervention, will create conditions that will allow the private sector to carry the stocks. This involves appropriate prices as well as location of inventories. Models have been developed to explore what may be termed the appropriate amount of carryovers in a market framework. When the public sector interferes with securing physical inventories, the private market adjusts to accommodate the reduced level of stocks available for private storage.

If the commodity market is functioning well, with good information flows and no credit constraints, and if the policy of the public sector vis-à-vis the management of the stocks is known and is credible, then the private sector will react to fully counteract what the public sector is doing. In other words, when the public sector accumulates stocks, the private sector will liquidate them, and if all of the conditions mentioned above hold, the private stock changes will be equal in magnitude and opposite in direction to what the public sector is doing. The net effect may be no change in the total volume of carryovers from one period to the next. This is truer the more perfect the market is in terms of information and number of actors. The point is that public stocks make a difference to total stock held only if the commodity markets exhibit some degree of imperfection.

With perfectly competitive storage activities, direct support for private storage market actors will improve welfare. However, perfectly competitive storage is a theoretical construct, and the reality might be affected by market imperfections. Furthermore, market power might play a substantial role for those commodities where storage requires rather specific investments, and alternative uses of storage capacities are limited, as for specialised meat storage. In the presence of market power in the storage industry, storage services are quantity constrained and, as a consequence, too expensive; thus, private storage occurs at lower than optimal levels. Hence, there could be a valid rationale for government intervention.

Moreover, public intervention faces a number of serious challenges:

- **Knowledge requirements**. Because the government actually takes possession of the product, detailed price discovery and market information is necessary. The greater the quality differentiation and the thinner the relevant product markets, the more difficult this process will be.
- **Logistic challenges**. Public stores are presumably not necessarily the most cost-efficient organisational forms for maintaining storage capacity. In particular, if the main objective of the public intervention scheme is market stabilisation, the storage capacities will not be fully exhausted on average. The capacities have to be large enough to take up substantial amounts, but this will only rarely happen. Of course, these problems can be circumvented if the state does not directly own the stores but

acquires capacities from private suppliers of storage space (provided that the supply side of the private store market is functioning sufficiently well).

- **Transport costs** in the enlarged EU. In the EU-27, the market impacts of intervention are spatially much more heterogeneous than they were in the smaller EU 20 years ago. Transport costs, in connection with a stronger degree of integration of EU markets in global markets, raise the question of whether intervention will be a successful vehicle for EU-wide market stabilisation.
- **Funding requirements of floor price policies**. Prices for commodities seem to be adequately described by non-stationary processes. This means that the funding requirements for floor price policies (as public intervention) are not self-balancing over time but can explode (Wright 2001). The experience with international commodity agreements in the past indicates that this is not a mere theoretical issue; for example, practically none of the commodity agreements invented after the oil crises have survived to the present day.
- **Disposal of buffer stock surpluses** in the absence of export subsidies. Intervention with unlimited budget resources will have to cope with relatively large stocks that, in the past, could be dumped outside of the Union with export restitutions. The abolition of these measures was agreed upon as part of the WTO Doha Development Round negotiations for 2013. Even with the sluggish progress in the multilateral trade talks, it seems unlikely that these policy measures will be accepted beyond 2013. Without the export measures, however, the stabilisation objective will require more domestic disposal, which shall take place in such a way that market disturbances are avoided. The main channel is via sales of products, although the scheme for food aid for deprived persons has gained in importance as an outlet over the past years, in particular since food prices started to rise again in mid-2010. Nevertheless, in situations with low agricultural product prices, the intervention scheme would have to rely more strongly on sales. Intervention schemes are based on tendering procedures implemented by the national paying agencies and are generally capable of achieving a sales price reflecting market realities. Problems might arise if the quality of the products has deteriorated in storage or if the stored products are located in relatively remote regions of Europe; e.g., for a Spanish pig farmer, imported cereal or cereal substitutes might be much more reasonable to purchase than corn from a Hungarian intervention store because mainland transportation typically involves substantially higher costs than ocean shipping.
- In the context of **further tariff reductions** resulting from the Doha round talks or further regional or bilateral trade agreements, the current intervention system might be affected by additional imports whose CIF prices could be lower than the guaranteed prices. Public intervention then could become a perfectly elastic demand channel not only for EU production but for the whole international market. Rules of origin could limit this problem, but enforcement of rules of origin frequently involves high transaction costs (and would still allow for the theoretical possibility that all EU production is offered to the intervention agencies when imports displace domestic production in consumption). Besides this, avoiding this problem requires either 'hard' restrictions on intervention quantities or adjustments to the pricing regulations. For example, the guaranteed price is no longer fixed at an immutable level but could be calculated based on a possibly moving average of past international prices. Such an approach would make the price floor implied by the current system more flexible and would thereby also help in avoiding excessive budgetary burden as well as the accumulation of stocks.

The use of public intervention as a safety net also implies some additional questions related to its adequacy and to the effects and determination of the floor price.

Regarding the objective, a safety net will generally work best if the trigger is based on a comprehensive income (or wealth) measure. Hence, because revenues might vary drastically, even with fixed prices, a purely price-related safety net will not be very successful (at least not as an isolated measure) in preventing catastrophic income situations. On the contrary, for a large open economy, domestic supply shocks tend to be offset partially by subsequent price reactions on the global market. For example, on the wheat market, low prices typically coincide with high production levels so that, to some extent, a natural hedge takes place. This mechanism is of course not observed when price shocks come from different markets (as with the dairy crisis).

But if a price safety net is deemed necessary, e.g., because a price floor is viewed as an important signal to enhance investments in agriculture, then storage-related policies, in particular public storage, are not among the best options. A floating price floor in which the intervention price depends on international price levels and/or volatility would appear to be less distortive but does not solve the operational challenges of a public storage system.

Recent changes in the overall policy environment have already led to similar floating price floors' becoming automatically available for most arable crop products. Changes in bioenergy policies have increased the direct (thermal heating) and indirect (biofuels/biogas) use of biomass for energy. The high levels of support, in combination with high international energy prices (in particular for crude oil), seem to prevent the dropping of crop prices to the historical lows observed in the 1990s and in the first years of the 2000s. If crude oil prices stay at current levels, the possibility of converting crops to bioenergy sources will act as a floor for the crop prices; however, as the experience with the 2007/08 price developments has shown, oil prices are extremely volatile, and it is by no means certain that they will stay at the current levels. One disadvantage of this policy-induced linkage between energy and agricultural markets should be mentioned: the markets are increasingly linked not only to price levels but also to price volatilities. Busse et al. (2011) illustrate this phenomenon for the relation between diesel and rapeseed prices. They find that the extent to which the inherently high volatility of diesel prices spills over to the rapeseed market is rapidly increasing over time.

2.3.2. Border Measures

The use of border measures as a market management instrument is restricted by the Uruguay Round on Agriculture Agreement (URAA). Nonetheless, some scope for intervention remains, particularly in market access.

Border protection continues to moderate the transmission of world price instability to EU markets. Furthermore, as WTO commitments only bind the maximum tariffs allowed, the EU can adjust the applied tariffs according to market conditions. Recently, the EU reduced applied tariffs on several occasions to ease the pressure on EU markets (suspension of tariffs for cereals after the 2007/09 price spike, for sugar in 2010, and for cereals from February to June 2011).

The possibility to apply additional import duties in case of serious market perturbations of the entry price system in fruit and vegetables is another intervention option.

The recourse to trade policies to control price volatility has given rise to a theoretical debate as trade restrictions contribute to increasing volatility of worldwide prices. Although there is some consensus that they do, the commitments agreed upon in the WTO were not designed for contexts of high commodity prices. In recent years, exporting countries have erected export barriers in the form of embargos, bans or tariffs, and importing countries have reduced their tariffs. All of these strategies are meant to make domestic prices lower than worldwide prices. These measures contribute to increased volatility of world markets. The WTO should thus consider expanding its trade disciplines to these situations because they will happen more often in the future than they have in the past.

Another issue related to market access is the effect of a new tariff reduction resulting from agreements made during the Doha Round. This would depend on the relation between domestic and world prices and the annual protection levels. While impacts for cereals would be rather small, for dairy products and beef, with quite large differences between EU and world prices, the impacts would be considerable. In the case of beef, dismantling the tariff would certainly reduce EU prices, threatening a significant portion of Community farms and adding to the pressure of increasing input prices in recent years.

Based on the importance of bovine farms in nature and rural landscape conservation within the EU, there is some rationale for requesting a special WTO statute for sensitive sectors (Chatellier, 2011). Furthermore, in the event of tariff reduction for products that already have low protection levels, such as cereals, intervention prices could be higher than world market prices. Safeguard clauses could be activated to raise protection levels.

Export subsidies are also included in the WTO disciplines. In recent years, the EU has reduced its use of export subsidies because of high world prices, but they still have a role for some products. The EU maintains its compromise to dismantle all of them in the event of an agreement in the Doha Round, which could have negative effects in the case of abnormally low world prices.

2.3.3. Augmentation demand strategies: Promotion

Some European regulations consider support for promotion activities as instruments to increase the consumption of agricultural products, helping to balance supply and demand.

Basic support is covered by *Council Regulation (EC) No 3/2008*. This single regulation covers all policies for promoting agricultural products in the EU and in third countries. This policy is thought to supplement and reinforce the schemes run by MSs by boosting products' image in the eyes of consumers in the Community and in third countries, with special emphasis on the quality, nutritional value and safety of foodstuffs and on methods of production. The policy also aims to open new markets for European products and to have a multiplier effect on national and private initiatives.

Council Regulation (EC) No 3/2008 includes some key aspects that should be taken into consideration:

- Promotion measures may be financed, fully or in part, by the Community budget subject to the conditions laid down in the Regulation.
- Eligible measures shall not be brand oriented or encourage the consumption of any product on grounds of its specific origins, with the exception of products covered by designations of origin.

The European Commission (up to 50%), MS (up to 30%) and the proposing organisations (20%) finance selected programmes. *Council Regulation CE 501/2008* also defines the list of themes and products and provides very precise indications to the trade companies that are interested in this programme. The indicative annual budget for this measure is 46 million EUR. However, the fruit and vegetable sector represents the 22% of the budget, and only five sectors concentrate the 54% of the annual budget.

The efficacy of this measure depends not only on its budget but also on a group of variables including the characteristics of products, the perceptions of consumers, the length and design of campaigns and the definition of targets. The basic idea of **generic promotion** is to increase the demand for a product without changing the market shares of producers.

Results from the analysis of the impact of generic advertising campaigns in the US suggest the following:

- Convincing evidence exists that generic advertising increases demand, and different works estimate that the rate of return for producers is rather high: 1 EUR spent in advertising generates about 2 to 5 EUR of return (e.g., Kaiser, 1997; Chakravarti and Janiszewski, 2004).
- The effectiveness might depend on the sector. For example, generic advertising of beef meat was not effective (although the amount of advertising may have been too small) and did not avoid the decrease in demand due to information about the health consequences of consuming beef (Kinnucan et al. 1997).
- Generic advertising of one product, when effective, might have negative effects on the demand for substitutes (the example of meat is frequently cited; cf. Brester and Schroeder, 1995).
- Generic advertising, while increasing the size of the "pie", also changes producers' shares of it. This could lead in some cases to lawsuits by producers who estimate that they have lost market share because of the generic advertising campaign (Chakravarti and Janiszewski, 2004).

The European Court of Auditors (ECA) evaluated the programme in 2009.[33] The report, based on an evaluation of the initiatives in Spain, Italy and France, concluded that:

- The impact of the measures is difficult to evaluate, and the objectives are not explicitly detailed within a strategy. Budgets are small, so objectives have to be modest.
- There has been a lack of selection criteria, clear objectives and accompanying indicators against which success could be evaluated.
- Some programmes were discontinued because of a lack of co-funding and/or poor execution.
- Checks on the selection of the implementing bodies, which play a key role in programme implementation, have significant weaknesses.
- Without co-financing, the programmes either would not have taken place or would have been much smaller (e.g., organic production).

[33] Document "*Information provision and promotion measures for agricultural products*" (Special Report n. 10, 2009).

Thus, the potential for market management using generic promotion as a demand augmentation measure is very limited. One of the main reasons is that the budget is very small. It may be useful for very specific organisations or producer associations that succeed in framing a promotion strategy and submitting an application to the national governments. It thus serves the interests of specific entities or regional denominations that market very specific products.

Difficulties also emerge regarding the preparation, organisation and design of projects. Usually the programmes are prepared by a number of firms, entities and institutions that must form a consortium. When there are many consortia (as in Italy), it is difficult to define common objectives and to adopt a comprehensive strategy that meets the needs of the project and of the consortia. The main risk is that the project will lose focus and efficacy.

Moreover, while the programmes aim to inform consumers about the intrinsic qualities or characteristics of the product, in general, financed actions have enhanced the product's image or cultural/regional characteristics.

Another possible demand augmentation strategy is **oriented-branded promotion**. Currently, it is funded through the Operational Programmes implemented by fruit and vegetables OPs and in the wine sector with the reform of CMO approved in *Council Regulation 479/2008.*

Regarding the Operational Programmes, under the EC Regulation 1234/07, the POs can develop promotion and communication actions and include them in the measures to prevent and manage market crises. Only those initiatives where the brand is owned by the POs, the POA and/or subsidiaries under their control are eligible for funding. The development of a brand may be considered from an information perspective as it helps the companies represented by the POs to communicate to consumers "the values of the producers." A brand helps producers to create value at the retail level, reducing the power of the private label in favour of the PO brand, and thus increases their bargaining power.
The POs play a central role in developing strategies for programming and promotion of their products. However, the effectiveness of their Operational Programmes is conditioned on the economic dimension, the productive segment covered, and the ability to create networks between POs, which in turn influences their ability to design and implement projects.

In the wine sector, *Council Regulation 479/2009* introduced the possibility to promote in third-country markets to improve the competitiveness of EU wine producers. The promotion of brands is allowed for wines with Protected Designation of Origin or Geographical Indication or wines with an indication of the wine grape variety in those countries. This regulation changes the strategies of wine producers with respect to the management of wine surplus and enables them to receive financial contributions for promoting quality wine. It is estimated that the total budget for this measure during 2009/2013 will total 798 million EUR.

The measure has been in force for several years, and the first results for Italy have been analysed. The results seem to be quite satisfactory, but it remains appropriate to continue working actively so that the programme's potential benefits can be realised (Pomarici and Sardone, 2009). So far, the programme has faced difficulties related to the implementation of a new measure, but some positive effects have also arisen. The process of preparing the projects requires proponents to develop a capacity for analysis

and prior planning of the activity, which may indirectly lead to an improvement in the quality of business processes, starting a positive process of redefinition of relations with importers in third countries.

To date, the organisation of promotional activities has generally been left to local importers, which are also involved in their partial funding, in competition with the resources of exporting firms. The need to present projects to apply for support has provided an opportunity for greater accountability than had been achieved in selected markets and, therefore, to think critically about how to improve the effectiveness of various actions in order to defend and enhance the competitiveness (Pomarici and Sardone 2009).

2.3.4. World markets and price stabilisation

Some factors may situate international prices in a long-term stable or upward trend with increased volatility and sudden upward spikes. Growing population and food demand, tight balance between supply and demand, climate change or the linkage with energy markets causing transmission of oil shocks to food markets are among the most cited.

The harmful effects of volatility in food markets, especially in the demand side and in reduced food security, have put in the political agenda of governments and international institutions the search for appropriate responses. The objective is not to reduce the volatility as consequence of market fundamentals. The goal is to reduce the uncertainty caused by extreme price variations resulting from unpredicted or unexpected events or market failures, such as imperfect information and the lack of transparency. Some proposals have been made to fulfill this objective. Therefore, the potential and limitations of these proposals are discussed.

One group of proposals considers the constitution of some kind of **international food stocks.** Taking in mind the past experience and the contribution of low stocks levels to the price spikes of the 2007-2008 markers crisis, some proposals have been made to constitute **physical reserves**. One of the more discussed proposals, by Von Braun, Lin and Torero (2009), is the creation of an internationally coordinated public grain reserve, which is also the more effective proposal for reducing price volatility (Torero and Von Braun, 2010).

The proposal considers a UN agreement committing a group of importing countries to hold public grain stocks in addition to those held by the private sector. The stock would be released to markets to prevent price spikes in accordance with the decisions of a kind of high-level technical commission. However, the proposal faces some technical and political obstacles to its implementation, including the determination of the optimum level of the reserve and the contributions to be made by each member as well as the associated costs. There are also governance and confidence problems. The feasibility of a technical commission with full authority over the grain's storage or release raises important questions regarding the experience of the failed International Agreements in agricultural products. There are also doubts about how governments would fulfil their commitments when the markets are under stress.

EU public intervention could be part of this system, but it should be reformed. Currently, public intervention works as a security net with the objective of preventing prices from falling below pre-established prices at very low levels. With a stabilisation objective, the public stocks should be considered as instruments designed to limit or control extreme

volatility, so they have to work as much with low prices as with high prices, protecting producers as well as consumers.

The reform of the public intervention could be based in the establishment of price bands, with upper and lower levels representing the trigger of intervention. Restrictions on quantities acquired or use of reserves in case of release, financial limits or conditions to trigger intervention should be imposed to prevent the system from becoming a regular resource. It should be used only in contexts of extreme volatility.

However, some doubts about its effectiveness also emerge:

- There is the risk that intervention could become a permanent practice.
- The costs associated are high.
- The response to avoid a price spike may not be as flexible and quick as needed.
- It discourages private storage and production in response market signals, especially when prices rise towards the upper limit.
- Their effectiveness to press down prices in case of spikes is also questionable.

Another proposal considers the constitution of **virtual reserves**. The idea, proposed by Von Braun and Torero (2009), is to avoid speculative bubbles, preventing speculators from driving up future market prices and thus containing spot prices. The process takes place through "naked short selling", which is not backed up by any physical commodity stock, thus preventing price spikes. A technical commission would establish the level of prices at which short sales start. Though the proposal is attractive, it possesses some shortcomings:

- Establishing the point where the sales must start is difficult, as is knowing the influence of excessive speculation on price spikes.
- The instruments only work with commodities for which futures markets exist, but price spikes occur also in related spot markets, wholesale and retail.
- The amount of financial resources needed in case of intervention is estimated be high.
- Some doubts persist regarding the influences of future market prices on the spot market prices, and more research on this topic is needed.

The second group of measures seeks making **markets** more **transparent**. Better **information** reduces uncertainty and facilitates more efficient responses of producers and consumers. One of the lessons of the recent commodity price bubble was that many governments and private agents acted in response to imperfect information, and overreacted, causing a bubble larger than could be justified by market fundamentals. This seems to have been the case in past commodity upheavals. Hence it would appear that enhanced information could help all agents in making more rational decisions, and thereby averting crises. In fact, the improvements in market transparency through better information of stocks of commodities have been included in the priorities of the French Presidency of G-20[34].

[34] Intervention de M.Bruno Le Maire, Ministre de L'Agriculture, de L'Alimentation, de la Pêche, de la Ruralité et de l'Aménagement du territoire. Priorités de la Présidence FranÇaise du G-20 en matière agricole. Assemblée Générale, 17 Février 2011.

There are several kinds of information that are relevant in this context, where there is scope for improvement:

- Reliable and timely information on crop supply, demand, stocks and export availability should contribute to improve transparency and reduce uncertainty. Better information could support producers and consumers in adopting correct responses.
- There is a need to improve the systems to monitor the state of crops and to make accurate harvests forecasts. Governments and international organizations would dispose of better instruments to support their decisions.
- Better and more complete monitoring of food prices, in spot and future markets, in the main ports, wholesale, regional or local markets would help to better understand price transmission processes, especially in less developed importing countries, which are the most affected by price spikes.

Given the global public good nature of this information, the right agency to collect and disseminate such information should be an international multilateral. In addition, countries should make a commitment to provide such information. The establishment of a global food market information system require international cooperation and commitment.

The EU could play a major role in enhancing these market information systems, by financing market information initiatives, especially in developing countries, and by facilitating the availability of such information through publicly available databases.

2.4. Food Access Instruments

KEY FINDINGS

- In the event of increasing food prices, charities and agencies in charge of food aid to the most deprived persons will have difficulties meeting the needs of target groups.
- Better coordination with other market measures would help agencies responsible for managing food aid to take advantage of depressed prices.
- Evidence on the impact of the School Schemes is ambiguous. Although the promotional material accompanying the Scheme is well done, the involvement of families is necessary to ensure that the educational objectives are met.
- The potential of the fruit schemes to better manage the sector's market imbalances is very limited.

2.4.1. Food aid to deprived people

The EU's "Food Distribution programme for the Most Deprived Persons of the Community" (referred to here as the MDP) has been in place since December 1987. The MDP is funded by the European Agricultural Guarantee Fund (EAGF). Its budget has increased from slightly less than EUR 100 million in 1987 to more than EUR 305 million in 2008. MSs' participation in the programme is voluntary. In 2006, over 13 million people in 15 MSs benefited from the MDP.

Recent reforms of the CAP have gradually reduced intervention to a safety net role. In 2008, market purchases made up 90% of the food distributed. In other words, charities and agencies had to purchase food at market prices, whereas in the past they had access to cheaper, stored products.

Stakeholders are currently discussing the status of the programme and have drawn two main conclusions. First, the food supply will be assured in terms of: (i) quantity, with automatic recourse to market purchases when intervention stocks are not available; (ii) quality - the number of types of food available will increase. Fruit and vegetables and cooking oil will now be covered by the programme, permitting a more balanced provision of meals and products; and (iii) forward planning - three-year plans will replace the current annual scheme. Second, the following changes will improve the scheme's efficiency: (i) better targeting of needs in MSs opting to take part in the programme; (ii) reinforced monitoring and reporting to continuously improve and strengthen the programme; and (iii) co-financing by MSs, which will make more resources available for the programme.

2.4.2. School food programmes

The School Fruit Scheme was established by the Commission Regulation (EC) 288/2009 as a direct application of Council Regulation (EC) No 1234/2007. The scheme provides Community aid targeted at children who regularly attend any of the educational establishments administered or recognised by the competent authorities of a MS. The financial aid to each MS is conditioned on the implementati of a national strategy including measures that will ensure its successful implementation. The objective of school programmes is to avert the declining consumption of fresh fruit and vegetables and to reduce obesity's prevalence. The idea is to provide a portion of fruit per week to all 26 million pupils between 6 and 10 years old, at a cost of 0.2 EUR per portion, during 30 weeks per year.

The following objectives were identified: (i) increase access to and availability of fruit and vegetables in schools; (ii) improve information and increase advertising on the health benefits of fruit and vegetables; and (iii) reduce social inequalities in fruit and vegetable consumption.

Fruit and vegetable prices will change as a consequence of the observed change in demand. If the School Fruit Scheme succeeds in reversing the falling trend in demand for fruit and vegetables, EU producers (and importers) will need to adapt to the new situation. There are doubts about this scheme's impact on demand. In addition, the no discrimination rule applies to school food programmes, which means that third countries' products cannot be discriminated against.

The 'Food Dude' programme in Ireland yielded good response rates in children's and families' eating habits, especially among the poorest[35]. However, such programmes require extensive involvement of schools' teachers and food managers. The educational component, coupled with packaging and presentation, is at least as important as the fact that fruits are distributed for free. The value of these programmes is based on health improvements and on the potential reversal of increasing obesity rates. Evidence from Italy on the impact of the Fruit and Vegetable Scheme is uncertain. Although the promotional

[35] Prof Fergus Lowe, Bangor University, http://ec.europa.eu/agriculture/markets/fruitveg/sfs/manco/lowe_en.pdf

material accompanying the Scheme is well done, teachers report that families must be involved.

The European School Milk Scheme is intended to encourage children's consumption of healthy dairy products containing important vitamins and minerals. Like the School Fruit Scheme, the programme has nutritional and educational goals and contributes to the fight against childhood obesity. The School Milk Scheme was reviewed by the European Commission, taking into account a number of requests and suggestions from the MSs, the European Parliament and the Council of the European Union.

In the 2006/2007 school year, the equivalent of 305 000 tonnes of milk was distributed in schools in 22 MSs with Community expenditures of more than 50 million EUR. With the new and simpler rules of the scheme as well as the renewed and more attractive product packaging, it is expected that even more schools will participate in the distribution of dairy products in the future, enabling and encouraging children to replace low-quality food and drinks with convenient, high-quality dairy products.

2.4.3. Emergency physical reserves

The EC currently does not have a policy of security stocks or emergency reserves for any products. A policy for security stocks and emergency reserves must refer to specific instances of insecurity or emergencies.

Generally speaking, food insecurity is not currently an issue within the EU. Food security is determined by access to food, which is in turn determined by per capita income and income distribution. Both average income (high) and income distribution (equitable) within the EU are favourable to low food insecurity. The average food budget share is only 14 percent, and this implies that food price crises have little effect on the purchasing power of final consumers. The EC has estimated that the 2007-8 price spikes caused only a 0.7 percent decline in EU average real purchasing power (European Commission 2008). This does not imply that there are no pockets of food insecurity within the EU, but in most EU MS there are more efficient instruments to deal with it (e.g., social welfare programmes).

However, the food crisis and the long-term trend of increasing food prices may have harmful effects on consumers, especially in poorer third countries. The increasing interdependence between agricultural policies and world markets has led developed countries to include global food security among their policy objectives.

In recent years, proposals have been made (Von Braun and Torero, 2009) about developed countries' contributions to global food security. Some of them call for the creation of physical reserves. The reserves, to be used exclusively for emergency responses and humanitarian assistance, would be managed by the World Food Program (WFP). The WFP would have access to these grains at pre-crisis market prices to reduce the need for short-term ad-hoc fund raising.

There are some issues concerning where the stocks would be located, the conditions and rules that would govern the withdrawals, whether the emergency reserve could be considered as a free emergency resource, and how the various food aid systems of different countries can be accommodated. These, however, are technical questions and can be worked out once the principle is agreed upon.

The instrument has the great advantage of providing a buffer ensuring timely availability of emergency relief supplies. It has the disadvantage that it must be coordinated with other donors, but given its small size relative to overall food aid flows, it could be instituted by one donor only. If the EU decides to take the initiative to create and be the principal underwriter of such a system, it could recruit donors in a cost-effective way to deliver timely humanitarian assistance.

This instrument is appealing in several ways. First, the amounts involved are not large, so such a reserve would not be expensive to acquire or maintain. Second, it would provide the EU with considerable flexibility to assist in food emergencies, even in times of high prices.

3. CONCLUSIONS AND RECOMMENDATIONS

Higher volatility and increasing trends in commodities prices, increasing interdependence with energy markets and the high concentration of processors/retailers on food markets will characterise European agriculture in the future. The final outcome of the WTO Doha Round could add further competitive pressure on some sectors characterised by reduced farms' margins, which face higher production costs, more demanding environmental regulations and increasing competition from third countries. Improvements in the information channels and access to new technologies will condition the sectors' capacity to cope with the new challenges. Perhaps the most important issues for European agriculture are increasing world food demand, climate change and scarce water, land and energy resources.

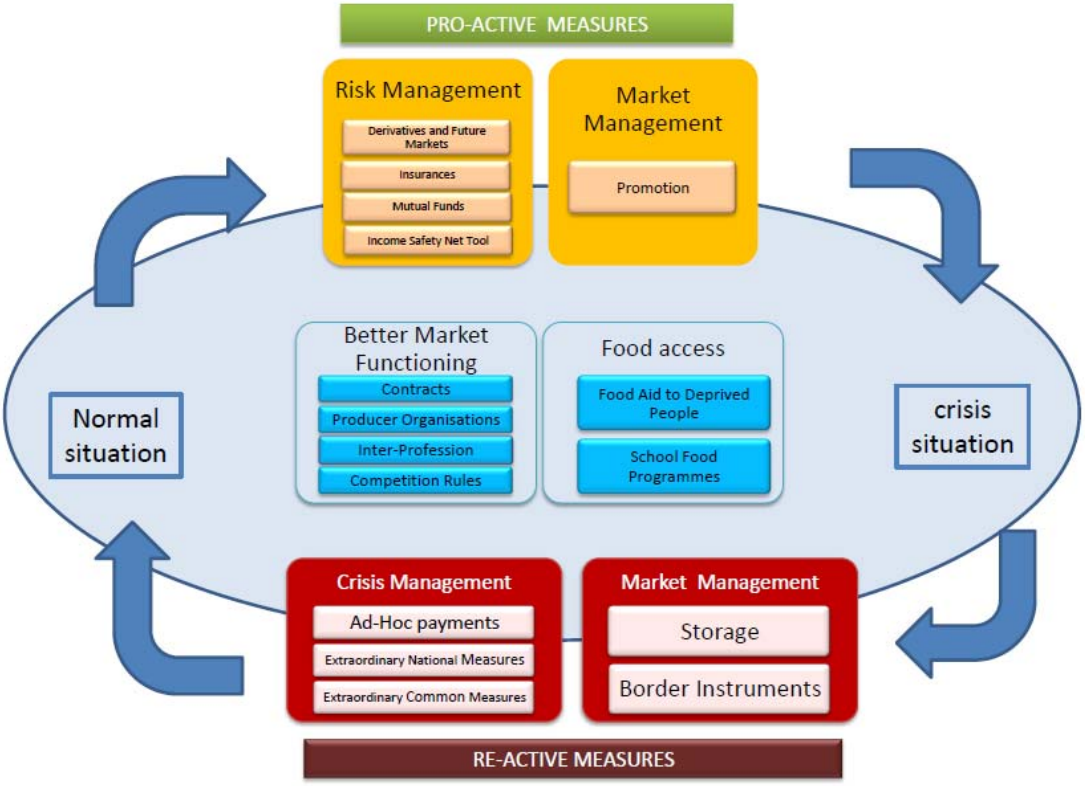
Future CAP must enhance the competitiveness of agriculture in more open markets while pursuing the stability of incomes and reinforcing the market orientation that inspired the most recent reforms. Because farmers operate in an increasingly uncertain context, the new CAP should help producers to better respond to market signals and manage market risks. Private market management instruments that were crowded out in the past by income and price support mechanisms will be needed in the future.

New market measures for the new CAP have to combine proactive instruments allowing producers to cope with moderate drops in prices or margins with reactive measures helping producers to rebuild their financial standing in cases of severe crises. Better characterisation of crises and the reasons behind their occurrence will be needed to prevent and cope with them.

The European Commission, in close cooperation with the national governments, should improve the information base and implement sophisticated market intelligence strategies. In the absence of state-of-the-art market data gathering and processing, future CAP's implementation will be severely limited by a lack of prospective and analytical methods. Information technologies, coupled with more widespread and transparent information, will surely help farmers, processors and government agencies. Member States must cooperate with the Commission to ensure that real-time market monitoring can enhance and support decisions in a timely manner.

Future CAP should deploy a mix of instruments at the right time and in the right conditions. Figure 11 provides a sketch of the types of market measures that the new market management strategies should consider. It includes pro-active measures that should be implemented in normal situations to enable farmers to cope better with risks and crises and to avoid crises by augmenting demand mechanisms. Reactive measures are activated once the crisis has occurred and allow farmers to rebuild their financial capacity and return to a normal situation. The array of market measures is completed with instruments directed at improving the functioning of the supply chain. Other instruments related to food access are also included in the figure.

Figure 11. Sketch of the new market management instruments for CAP post-2013



The following premises should be taken into account in defining the set of instruments needed for the future CAP:

- Actions need to be taken to improve the functioning of markets, making them more transparent, fair and competitive. The establishment of common guidelines for enhancing FSC should be included in all sectors as a structural measure. They will provide synergies that may reduce the need to implement market management instruments and public-sector market interventions.
- A desirable approach is one that shifts the focus from relief to preparedness; thus, adaptation and risk management measures should be prioritised over relief and crisis management in the design of the post-2013 CAP.
- An ideal balanced mix of resilience instruments to be included in the risk management toolkit should be based on public-private partnerships.
- More open markets and the WTO disciplines limit the power of traditional market management measures such as storage and trade policies to stabilise agricultural prices. These instruments should be only used under severe and extreme internal market crises.
- There is a need for a gradual change in the design of market measures in the new CAP. The traditional top-down approach should give way to a bottom-up approach where more emphasis is placed on flexibility to allow farmers to develop adaptation strategies.
- All market measures should be included in a single CMO. The new framework for market measures should flexible enough for the entire EU and all sectors so that they can address all situations and national legal set-ups. It would have to include

instruments with wide sectoral coverage, precise menus and possibilities of action in MSs and conditions of triggering exceptional measures in cases of serious market perturbation.

Better market functioning and performance

- The **contractual mechanisms** have a central role in well-functioning agricultural markets. Each sector needs a type of standard contract, but all must count on the consensus of all relevant sectors' stakeholders.
- Non-compulsory **standard contracts** facilitate smooth negotiations along the FSC without imposing restrictive constraints. Prices should be freely negotiated between the parties. The introduction of standardised contracts should be accompanied by monitoring committees with arbitraging competencies to deal with contractual issues.
- **Codes of "good commercial practices"** may help to promote fair vertical relations. They should be voluntary, though adherence could be promoted and recognised through certification mechanisms. The Commission has a leading role in promoting these mechanisms across the EU.
- Promoting the **Organisations of Producers** and the cooperative model is a way not only to concentrate supply and create economies of scale, but also to improve vertical coordination and capture added value share in the FSC. Possible extensions of PO programmes from fruit and vegetables to other sectors should be considered. The POs have made significant progress in innovation, supported by EU-funded Operational Programmes.
- **Inter-professional Organisations** are useful institutions for the organisation of the food supply chain. They help to coordinate actions within the chain and develop actions whose aim is to increase the added value created by the whole chain. EU recognition should be extended to all products as they could play a central role in designing standard contracts.
- **Competition rules** should be maintained, and unbalanced market power should be addressed through contractual mechanisms, codes of good practices and better farmer organisation in POs and IPOs. Better monitoring of market prices and transparency will surely deter dominant market positions and enable more effective scrutiny by competition authorities.

Risk and crisis measures

- A **new risk management policy** should be included in the new CAP.
- The new risk management policy builds on the **accumulated experience of MSs** and complements existing programmes, but it also aims to **fill the gaps** created by new risk sources and hazards. It will accommodate existing and new funding frameworks, giving MSs ample freedom to select the desired format.
- A **toolkit** offering a menu for diverse EU agriculture and farmers' risk perceptions is proposed. It could be included in the first or second pillars and be based on flexible co-funding schemes, risk layering and co-responsibility of farmers. No instrument in the toolkit should be offered for free.
- E-learning programmes could be developed to **train** farmers to better understand relevant risks and the usage of risk management instruments. The potential of new technologies should be exploited to provide farmers with relevant information and practical training.

- **Normal/business risk** can be managed with mutual funds, futures and options and production and income insurance. The development of derivative (futures and options) markets, insurance and mutual schemes should be fostered by the provision of timely and reliable market information and by adequate regulatory frameworks.
- **Common guidelines for EU agricultural insurance** markets should help to create EU-wide insurance markets and operations, allowing for more risk pooling, and technological innovation in the EU.
- Extreme risk should be addressed through a new **Income Safety Net Tool**. Developed as a public-private partnership scheme, it should be based on farmers' co-responsibility and on co-financed schemes, and it must fit with green box requirements. Although its implementation at the EU level would be cheaper and more efficient at pooling wide risks, it could be more viable at the national level, at least in the first stages of implementation.
- More **flexible EU budget** programming and appropriation rules should be considered. This would enable the Commission to take timely exceptional measures according to the single CMO in cases of widespread crisis in sectors with high implantation in the Community.
- Although authorisation for **national ad-hoc state aid** could be a one-off solution for very specific problems, it would not appear to be an appropriate solution for dealing with market crises. It could give rise to competition problems in the internal market and would imply a clear re-nationalisation of the CAP. Therefore, "de minimis" aid can be seen as a last resort for small amounts of aid that cannot be provided in any other way. It is advised to limit their use to very specific problems.

Market management

- **Private storage** should always precede and prevail over **public storage**. Public storage could be maintained as a last resort, allowing the Commission to take exceptional measures in cases of serious market disturbances. Private storage should be targeted to solve temporary critical price or market situations, but never to solve structural market unbalances.
- Some scope for **border protection** remains, especially in market access regulation. Tariffs should be temporarily reduced or suppressed in situations of high world prices threatening EU supplies. Safeguard clauses and special treatment for sensitive products could be considered if serious disturbances occur in the internal market. Export refunds should not be allowed.
- **Promotion** of EU agricultural and food products which compete in non-EU markets with other exporters' whose governments do support producers' commercial actions, are an effective means for opening new market opportunities. As programmes in the wine sector have demonstrated, such programmes enhance the internationalisation of the agricultural firms and promote more efficient and dynamic institutional organisations.
- There is scope to further reinforce the **promotion of products with inherent** EU value or intrinsic quality (e.g., ecological, cultural), but increased funding is needed to achieve the objectives.

Food access and health considerations

- Improving **human health** through the consumption of fruit and vegetables and dairy products should be considered an essential social objective.

- **School Schemes** have very little potential for managing the fruit and vegetable and dairy markets. Policy objectives are more related to health and education goals for all EU children. Information provided to pupils, teachers and parents should be considered the core of the Scheme. The scope of the scheme should extend beyond the environment of the school to promote healthy household eating habits.
- Programmes of **food aid to deprived people** should be better coordinated with agricultural markets. In the event of a crisis in a given sector, and even before that, signals should be triggered to ensure that charities and agencies running food aid programmes can procure product without much delay.
- The **logistics** required for rapid execution of food aid programmes must be deployed in ways that comply with the administrative standards of the EC while taking advantage of the commodities undergoing depressed prices. In the case of non-storable commodities, such as fresh fruits and vegetables, there should be closer linkages with the anti-crisis programmes of the POs.

Other general policy recommendations

- The EU should enhance its role as a leading provider of humanitarian help in third countries. **Emergency reserve** targeted consumption would be a European contribution to food security.
- To the extent that markets are more open, it becomes evident that the CAP is not a watertight compartment. **Better coordination with other EU policies** is needed, seeking synergies and avoiding conflicting policy interactions. This includes policies such as trade, financial, competence, consumer, industry and firm and enterprise policies.
- **World markets** need reinforced regulations and better governance. The EU has a role and an interest in making the main commodities markets work more transparently and efficiently. EU action in this area falls in the sphere of other common policies. However, their strengthening can induce positive effects in agricultural markets, reducing the need for more expensive policies.
- Efforts are needed **to make market more transparent** through better information systems**.** The EU could play a major role in enhancing these by financing market information initiatives, especially in developing countries, and by facilitating the availability of such information through publicly available databases.

GLOSSARY

Calamity fund: Publicly organised fund for natural calamity compensations to farms, fed from the public budget and from specific fiscal contributions from farms. Eligibility is reduced for farms that buy insurance (example: the French *Fonds national de garantie des calamités agricoles*, linked to fire insurance for buildings).

Derivatives: In finance, a derivative is a financial instrument (or, more simply, an agreement between two parties) that has a value based on the expected future price movements of the asset to which it is linked—called the underlying asset— such as a share, a currency or a commodity. There are many kinds of derivatives, with the most common being swaps, futures, and options.

Derivatives markets: Futures markets or formal exchanges.

Income Stabilisation Tool: Term used by the European Commission, quite similar to the Income Safety Net Tool described below.

Income Safety Net Tool: Organised by the public sector, complying with WTO criteria on income compensations (Paragraph 7). Example: Agri-Stability in Canada. In this report, the Income Safety Net Tool proposed would require ex-ante subscription and the payment of a fee by farmers (co-responsibility), and it would provide compensation only for non-insurable losses.

Mutual funds: Synonym of 'Mutual risk-sharing agreements'. As defined by the European Commission (COM (2005) 74), mutual funds represent a way of sharing risk among groups of producers who want to take responsibility for risk management. The fund's capital can be called on by members in the event of severe income losses to be specified by predefined rules. In the past, agricultural mutual funds established on private initiative were set up mainly at a sector-specific level, where producers share comparable risks.

Mutual risk-sharing arrangements: Synonym of 'Mutual funds' as defined by the European Commission.

Over the Counter (OTC): Off-exchange trading or trading financial instruments such as stocks, bonds, commodities or derivatives directly between two parties. It is contrasted with exchange trading, which occurs via facilities constructed for the purpose of trading, such as futures exchanges or stock exchanges.

Risk management toolkit: Proposed by the Commission Communication on "The CAP towards 2020" (COM (2010) 672 final), the toolkit comprises the following instruments: income stabilisation tool, insurance and mutual funds.

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